



United States
Department of
Agriculture

Rural
Utilities
Service

Informational
Publication
344-2

January 2003

LIST OF MATERIALS

Acceptable for Use on

Telecommunications

Systems of RUS

Borrowers

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PREFACE

This List of Materials (Telecommunications) supersedes all preceding issues including supplements of RUS Informational Publication 344-2. It reflects all actions of the Technical Standards Committees "A" and "B" (Telecommunications) through January 31, 2003, and includes changes in listings due to additions, deletions, and corrections made through Meeting No. 754 of Technical Standards Committee "A" (Telecommunications). Supplements reflecting changes in the List of Materials (Telecommunications) will be issued periodically and should be inserted to keep your copy up-to-date.

The small letters used to designate many construction items listed herein correspond to the letters used on construction drawings to indicate individual items of material; however, many equipment items have been assigned letter combinations only as a means of identification within the List of Materials (Telecommunications).

The acceptance of an additional item or the deletion of an existing item is a function of the RUS Administrator and Technical Standards Committees "A" and "B" (Telecommunications). Anyone desiring to have a new item placed on the List of Materials (Telecommunications), or believing an existing item should be removed from the List of Materials (Telecommunications), is invited to submit the matter to Technical Standards Committee "A" (Telecommunications). Any communication calling attention to an error, an obsolete item, etc., will also be appreciated. All communications should be addressed to the Chairman, Technical Standards Committee "A" (Telecommunications), Stop 1598, U.S. Department of Agriculture, Rural Utilities Service, 1400 Independence Avenue, SW., Washington, D.C. 20250-1598.

The inclusion of an item in the List of Materials (Telecommunications) does not indicate that that item's manufacturer or its principals have not been debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded pursuant to Executive Order 12549, Debarment or Suspension, or any rules or regulations issued thereunder, including 7 CFR Part 3017 ("Debarment Regulations"). Therefore, borrowers must comply with the requirements imposed by the Debarment Regulations before entering into any "covered transaction," as defined by 7 CFR Part 3017, involving any item on this List of Materials (Telecommunications).

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*Item no longer listed.

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ORDERING INFORMATION

When ordering wire and cable having a standard RUS Unit Designation, this designation must be specified with the appropriate suffix or combinations of suffixes to indicate the type to be supplied. For example, filled cable with gopher-resistant shield containing copper and having compartmental cores (Screened) would be designated "BFCYH."

sc - Buried Cable

RUS Standard Designations "BFC", "CW", and "UF" (Filled) 7 CFR 1755.390
These manufacturers' cables shown by catalog designations comply with 7 CFR 1755.390

RUS Standard Suffixes

<u>Manufacturer</u>	<u>A(1)</u>	<u>C(1)</u>	<u>Y(1)</u>	<u>X(1)</u>	<u>H(1)</u>	<u>H1C(2)</u>	<u>P(1)</u>
Belden Wire & Cable	WG_(8)AR	WG_(8)CR	WG_(8)JR	WG_(8)WR	-	-	-
General Cable	PE-39-AL	PE-39-CU5	PE-39-CBS	PE-39-CAC	_(3)T1	_(3)T1C	-
Nacional De Conductores Eléctricos (Condumex) ⁽⁵⁾	AM_(12)C	-	AM_(12)Q	AM_(12)D	-	-	-
Superior/Essex	SEALPIC ^R -F	CUPIC ^R -F	_(9)PIC ^R -F CUPIC ^R -F10	CASPIC ^R -F	_(3)T1 _(3)T1	_(3)T1C _(3)T1C	_(4)P _(4)P

See page 1.1.2 for suffixes and notes.

sc - Buried Cable

RUS Standard Designations "BFC", "CW", and "UF" (Expanded Insulation - Filled) 7 CFR 1755.890
 These manufacturers' cables shown by catalog designations comply with 7 CFR 1755.890

RUS Standard Suffixes

<u>Manufacturer</u>	<u>A⁽¹⁾</u>	<u>C⁽¹⁾</u>	<u>Y⁽¹⁾</u>	<u>X⁽¹⁾</u>	<u>H⁽¹⁾</u>	<u>H1C⁽²⁾</u>	<u>P⁽¹⁾</u>
Belden Wire & Cable ⁽⁶⁾	WA_(8)AR	WA_(8)CR	WA_(8)JR	WA_(8)WR	KA_(8)_ ⁽¹⁰⁾	-	-
General Cable ⁽⁶⁾	PE-89-AL	PE-89-CU5	PE-89-CBS	PE-89-CAC	_ ⁽³⁾ T1	_ ⁽³⁾ T1C	-
Nacional De Conductores Eléctricos (Condumex) ⁽⁵⁾⁽⁶⁾	AN_(12)D	-	AN_(12)Q	AN_(12)D	-	-	-
Superior/Essex ⁽⁷⁾	SEALPIC ^R -F_ ⁽¹¹⁾	CUPIC ^R -F_ ⁽¹¹⁾	_ ⁽⁹⁾ PIC ^R -F_ ⁽¹¹⁾ CUPIC ^R -F_ ⁽¹¹⁾ 10	CASPIC ^R -F_ ⁽¹¹⁾ -	_ ⁽³⁾ T1 _ ⁽³⁾ T1	_ ⁽³⁾ T1C _ ⁽⁷⁾ T1C	_ ⁽⁴⁾ P _ ⁽⁴⁾ P

See page 1.1.2 for suffixes and notes.

Suffixes

Coated Aluminum Shield -----	A
5 Mil Copper Shield -----	C
Gopher-Resistant Shield Containing Copper-----	Y
Gopher-Resistant Shield/Armor Design -----	X
Screened Cable for T1 Carrier -----	H
Screened Cable for T1C Carrier -----	H1C
Preconnectorized Cable 100 pairs and greater -----	P

Notes:

- (1) Available in 19 through 26 AWG conductor sizes.
- (2) Available in 19 through 24 AWG conductor sizes.
- (3) Replace blank with manufacturer's catalog designation shown in the listing for suffixes A through X.
- (4) Replace blank with manufacturer's catalog designation shown in the listing for suffixes A through H1C.
- (5) Not accepted for 19 AWG conductor sizes.
- (6) Accepted for only foam/skin.
- (7) Accepted for foam and foam/skin.
- (8) Replace blank with either the number 9, 2, 4, or 6 to specify conductor AWG size.
- (9) Replace blank with either the letters B1 or GO to specify shield type.
- (10) Replace the blank with the letters AR, CR, JR, or WR to specify shield type.
- (11) Replace blank with either the letter F or the letters SF to specify conductor insulation type.
- (12) Replace blank with either the letter A, M, or T to specify conductor AWG size.

1.2
1-03
ct

ct - Terminating Cable⁽¹⁾

These manufacturers' cables shown by X's comply with 7 CFR 1755.870.

Manufacturer

RUS Standard Designation Suffixes

A

P

General Cable

X

-

Suffixes:

Coated Aluminum ----- A
Preconnectorized Cable 100 pairs and greater----- P

Notes: (1)To be supplied in only 22 and 24 AWG sizes.

sa - Filled Buried Wires

These manufacturers' filled buried wires shown by catalog designations comply with 7 CFR 1755.860.

<u>Manufacturer</u>	<u>Catalog Designation</u>			
RUS Standard Designations:	<u>Distribution</u> ⁽¹⁾		<u>SEB (service)</u> ⁽²⁾	
RUS Standard Suffixes:	<u>N</u>	<u>Y</u>	<u>N</u>	<u>Y</u>
Belden Wire & Cable	BFWN	BFWY	BFWN	BFWY
General Cable	BFWN	BFWY	BFWN	BFWY
Superior/Essex	BDW-B -	BDW-G-CSC -	BDW-B BDWB-DF ⁽³⁾	BDW-G-CSC BDWG-DF ⁽³⁾

Suffixes:

Copper Alloy 220 (Bronze) Shield -----N
Gopher-Resistant Shield -----Y

Notes:

⁽¹⁾Available in 22 and 24 AWG conductor sizes.

⁽²⁾Available only in 22 AWG conductor size.

⁽³⁾Wire uses a "Water Blocking Powder" in place of a "Gel Compound" as the filling compound surrounding the twisted pairs in the wire core.

1.4
1-03
nt

nt - Aerial Service Wires

RUS Standard Designation "SEA"

These manufacturers' wires shown by catalog designations comply with 7 CFR 1755.700 through 7 CFR 1755.704

nt-a Copper Covered Steel Reinforced (CCSR) Aerial Service Wires

<u>Manufacturer</u>	<u>Catalog Designations</u>					
	<u>Standard</u>		<u>Reduced</u>		<u>Super-Reduced</u>	
	<u>oval</u>	<u>dumbbell</u>	<u>oval</u>	<u>dumbbell</u>	<u>oval</u>	<u>dumbbell</u>
General Cable	-	ADR-182-PVC	-	-	-	-
Superior/Essex	ADP	ADP-D	-	-	ADP/SR	ADP/SR-D

nt-b Nonmetallic Reinforced (NMR) Aerial Service Wires

<u>Manufacturer</u>	<u>Catalog Designations</u>			
	<u>2-Pair</u>	<u>3-Pair</u>	<u>5-Pair</u>	<u>6-Pair</u>
Belden Wire & Cable	2X22 ____ ⁽¹⁾	3X22 ____ ⁽¹⁾	5X22 ____ ⁽¹⁾	6X22 ____ ⁽¹⁾
General Cable	2 TPR 22 AWG GSDW	-	-	6 TPR 22 AWG GSDW
Superior/Essex	2X22 ADP NMS	-	-	6X22 ADP NMS

⁽¹⁾Replace blank with either "FRASW" or "FRASW Universal."

oc-Fiber Optic Cable

RUS Standard Designations "BFO", "CO", and "UO" (Filled) 7 CFR 1755.900
These manufacturers' cables shown by catalog designations comply with 7 CFR 1755.900

oc-a Unit Core or Central Core Tube Fiber Core Construction

RUS Standard Suffixes

Cable Construction

<u>Manufacturer</u>	<u>A(1)</u>	<u>B(1)</u>	<u>C</u>	<u>D</u>	<u>P(2)</u>	<u>s</u>	<u>m</u>	<u>Mode</u>
Alcatel	-	Unitube(5)	Unitube(5)	-	-	X	-	
	-	-	MicroUnitube™(6)	-	-	X	-	
Corning Cable Systems(7)	-	SST-Ribbon	SST-Ribbon	-	(X)P-RUS	X	X	
		SST	SST(12)	-	(X)P-RUS	X	X	
OFS BrightWave(6)	-	(26)DNX	(26)D_(11)X	-	-	X	-	
	-	713X	71SX	-	-	X	-	
Pirelli(5)	-	-	-	CentraLink™(4)(20)	-	X	-	
Sumitomo Electric(7)	-	Litepipe™ ADS™	Litepipe™ Armorlux®	-	-	X	X	
Superior Essex(5)	-	SLT(4)	-	SLT(4)	-	X	-	
	-	SLT-D-R (Ribbon)(4)	-	SLT-D-R (Ribbon)(4)	-	X	-	

See page 1.5.4 for suffixes and page 1.5.5 for notes.

oc-Fiber Optic Cable

RUS Standard Designations "BFO", "CO", and "UO" (Filled) 7 CFR 1755.900
 These manufacturers' cables shown by catalog designations comply with 7 CFR 1755.900

oc-b Gel Filled Multiple Loose Tube Core Construction(3)**RUS Standard Suffixes****Cable Construction**

<u>Manufacturer</u>	<u>E(1)</u>	<u>F(1)</u>	<u>G</u>	<u>H</u>	<u>P(2)</u>	<u>s</u>	<u>m</u>	<u>Mode</u>
Alcatel ⁽⁵⁾	Loose Tube Filled	Loose Tube Filled	Loose Tube Filled	Loose Tube Filled	-	X	-	
Belden Wire & Cable ⁽⁶⁾	-	-	-	L_(27)-0P	-	X	-	
Draka Comteq ⁽⁵⁾	-	R740L Series	-	R700L Series	-	X	-	
OFS BrightWave ⁽⁷⁾	Non-armored -	Non-armored -	Armored Light-Armored	Armored Light-Armored	(X)P-RUS (X)P-RUS	X X	X X	
Pirelli ⁽⁵⁾	-	Dielectric LT ⁽²⁰⁾	-	Armored LT ⁽²⁰⁾	-	X	-	
Remee Products ⁽⁷⁾	-	22 Series	-	23 Series ⁽²¹⁾ 28 Series ⁽²⁴⁾	-	X	X	
Sumitomo Electric ⁽⁷⁾	SE-_(25)HK	SE-_(25)GK	SE-_(25)H_(19)	SE-_(25)G_(19)	-	X	X	
Superior Essex ⁽⁵⁾	MLT	MLT	MLT	MLT	-	X	-	

See page 1.5.4 for suffixes and page 1.5.5 for notes.

oc-Fiber Optic Cable

RUS Standard Designations "CFO" (Filled) 7 CFR 1755.900
 These manufacturers' cables shown by catalog designations comply with 7 CFR 1755.900

oc-c Self-Supporting Filled Fiber Optic Cables

<u>Manufacturer</u>	<u>RUS Standard Suffixes</u>					<u>Cable Construction</u>		<u>Mode</u> <u>s</u> <u>m</u>
	<u>I</u>	<u>J</u>	<u>K</u>	<u>L</u>	<u>P(2)</u>			
Alcatel	EZ PREP™ Figure 8 ⁽⁵⁾ EZ PREP™ Figure 8 ⁽⁶⁾⁽²³⁾	EZ Span™ ⁽⁶⁾ -	EZ PREP™ Figure 8 ⁽⁵⁾ EZ PREP™ Figure 8 ⁽⁶⁾⁽²³⁾	-	-	-	-	X - X -
Alcoa Fujikura Ltd ⁽⁷⁾	-	AFL Mini-Span Series ⁽²³⁾	-	-	-	-	-	X X
Corning Cable Systems ⁽⁷⁾	SST-Ribbon ALTOS™ ⁽²³⁾ ALTOSRD™ ⁽²³⁾ SST	SOLO-ADSS ⁽²⁰⁾ SOLO-ADSS ⁽²⁰⁾⁽²³⁾ -	SST-Ribbon ALTOS™ ⁽²²⁾⁽²³⁾ ALTOSRD™ ⁽²²⁾⁽²³⁾ SST ⁽¹²⁾	-	(X)P-RUS (X)P-RUS (X)P-RUS (X)P-RUS	X X X X X X X X		
General Cable ⁽⁶⁾	4M _— ⁽¹³⁾ Y-DWB ⁽²³⁾	-	4H _— ⁽¹³⁾ N-DWB ⁽²³⁾	-	-	-	-	X -
OFS BrightWave	Figure8 ⁽⁷⁾ -	PowerGuide ⁽⁷⁾⁽²¹⁾ PowerGuide ⁽⁸⁾⁽²⁰⁾⁽²³⁾	Armored Figure8 ⁽⁷⁾ -	-	(X)P-RUS (X)P-RUS	X X X X		
Pirelli ⁽⁵⁾	-	AeroLink™ ⁽²³⁾	-	-	-	-	-	X -
Remee Products	88 Series ⁽⁷⁾ 88W Series ⁽⁶⁾⁽²³⁾	88 Series ⁽⁷⁾ 88W Series ⁽⁶⁾⁽²³⁾	83 Series ⁽⁷⁾ 83W Series ⁽⁶⁾⁽²³⁾	83 Series ⁽⁷⁾ 83W Series ⁽⁶⁾⁽²³⁾	-	X X X -		
Sterlite Optical ⁽⁵⁾	-	Aerial-Lite(ADSS) ⁽²³⁾	-	-	-	-	-	X -
Superior Essex ⁽⁵⁾	MLT-8 MLT-D-8 ⁽²³⁾	-	MLT-8 MLT-D-8 ⁽²³⁾	-	-	-	-	X - X -

See page 1.5.4 for suffixes and page 1.5.5 for notes.

oc-Fiber Optic Cable

RUS Standard Designations "BFO", "CO", and "UO" (Filled) 7 CFR 1755.900
 These manufacturers' cables shown by catalog designations comply with 7 CFR 1755.900

oc-d Dry Filled Multiple Loose Tube Fiber Core Construction⁽³⁾⁽²³⁾

<u>Manufacturer</u>	<u>RUS Standard Suffixes</u>					<u>P(2)</u>	<u>Mode</u>	
	<u>E(1)</u>	<u>F(1)</u>	<u>G</u>	<u>H</u>	<u>s</u>		<u>s</u>	<u>m</u>
Alcatel ⁽⁶⁾	EZ PREP™ Loose Tube	EZ PREP™ Loose Tube Non-Armored Flex Tube ^{TM(29)}	EZ PREP™ Loose Tube Armored Flex Tube ^{TM(18)}	EZ PREP™ Loose Tube	-	-	X	-
	-			-		-	X	-
Alcoa Fujikura Ltd. ⁽⁷⁾	-	AFL Loose Tube Cable	-	AFL Armored Loose Tube Cable	-	-	X	X
Belden Wire & Cable ⁽⁶⁾	-	-	-	(10) (27)FM	-	-	X	-
CommScope ⁽⁶⁾	-	LN-XY-F12NS	-	L_(30)-XY-F12NS	-	-	X	-
Corning Cable Systems ⁽⁷⁾	ALTOS™ ALTOSRD™	ALTOS™ ALTOSRD™	ALTOS™_ (22) ALTOSRD™_ (22)	ALTOS™_ (22) ALTOSRD™_ (22)	(X)P-RUS (X)P-RUS	X	X	
Draka Comteq ⁽⁹⁾	-	DR740L Series	-	-	-	-	X	X
General Cable ⁽⁶⁾	4_(28)2A-DWB	4_(28)1A-DWB	4_(28)2F-DWB	4_(28)1F-DWB	-	-	X	-
Hitachi Cable ⁽⁵⁾	-	60090	-	60102(24) 60298(21)	-	-	X	-
-	-	-	-	-	-	-	X	-
OFS BrightWave ⁽⁸⁾	Non-armored	Non-armored	Armored Light-Armored	Armored Light-Armored	(X)P-RUS (X)P-RUS	X	X	
Pirelli ⁽⁵⁾	-	FlexLink™	-	FlexLink™(20)	-	-	X	-

See page 1.5.4 for suffixes and continued oc-d dry-filled design listing; see page 1.5.5 for notes.

oc-Fiber Optic Cable

RUS Standard Designations "BFO", "CO", and "UO" (Filled) 7 CFR 1755.900
 These manufacturers' cables shown by catalog designations comply with 7 CFR 1755.900

oc-d Dry Filled Multiple Loose Tube Fiber Core Construction(3)(23) (Cont'd)

<u>Manufacturer</u>	<u>RUS Standard Suffixes</u>				<u>P(2)</u>	<u>Mode</u>	
	<u>E(1)</u>	<u>F(1)</u>	<u>G</u>	<u>H</u>		<u>s</u>	<u>m</u>
Reme Products ⁽⁶⁾	-	22W Series ⁽²⁴⁾	-	28 Series ⁽²⁴⁾	-	X	-
	-	25W Series ⁽²¹⁾	-	23W Series ⁽²¹⁾	-	X	-
Sterlite Optical ⁽⁵⁾	Duct-Lite	Duct-Lite	Armor-Lite	Armor-Lite	-	X	-
Sumitomo Electric ⁽⁷⁾	DriCore®	DriCore®	DriCore®	DriCore®	-	X	X
Superior Essex ⁽⁵⁾	MLT-D	MLT-D	MLT-D	MLT-D	-	X	-

Suffixes:

- A - Nonarmored with Metallic Strength Members Embedded in Jacket
- B - Nonarmored with Dielectric Strength Members Embedded in Jacket
- C - Armored with Metallic Strength Members Embedded in Jacket
- D - Armored with Dielectric Strength Members Embedded in Jacket
- E - Nonarmored with Metallic Central Strength Member
- F - Nonarmored with Dielectric Central Strength Member
- G - Armored with Metallic Central Strength Member
- H - Armored with Dielectric Central Strength Member
- I - Nonarmored with Metallic Support Messenger
- J - Nonarmored with Dielectric Support Messenger
- K - Armored with Metallic Support Messenger
- L - Armored with Dielectric Support Messenger
- P - Preconnectorized Cable
- s - Single Mode
- m - Multimode

See page 1.5.5 for notes.

Notes

- (1) Aerial and duct use only.
- (2) Replace (X) with manufacturer's catalog designation shown in the listing for Cable Construction Types A through L.
- (3) May contain multiple fibers per tube.
- (4) Not embedded in jacket; surrounds central core tube.
- (5) Accepted only for dispersion-unshifted and dispersion-shifted single mode optical fibers.
- (6) Accepted only for dispersion-unshifted single mode optical fibers.
- (7) Accepted for dispersion-unshifted and dispersion-shifted single mode optical fibers. Also accepted for 50/125 and 62.5/125 micrometer multimode optical fibers.
- (8) Accepted for dispersion-unshifted and dispersion-shifted single mode optical fibers. Also accepted for 62.5/125-micromode optical fibers.
- (9) Accepted only for dispersion-unshifted single-mode and 50/125 and 62.5/125 micrometer multimode optical fibers.
- (10) Replace blank with either the letter A or L to indicate a double or single jacket.
- (11) Replace blank with either the letter H, M, R, or S.
- (12) Can only be supplied in sizes greater than 12 fibers.
- (13) Replace blank with the number 1 or 2.
- (18) Cable contains no metallic central strength member. Metallic strength members are embedded in the jacket.
- (19) Replace blank with either the letter A or E.
- (20) When ordering designate either single or double jacketed cable.
- (21) Double jacketed design.
- (22) Leave space blank or replace blank space with the word "Lite."
- (23) Cable uses a "Water Blocking Tape" in place of a "Gel Compound" as the filling compound surrounding the multiple loose tube buffers in the cable core.
- (24) Single jacketed design.
- (25) Replace blank with either the number 1, 2, 3, or 4.
- (26) Replace blank with either the number 4 or 7.
- (27) Replace blank with either a 6 or a T to indicate number of fibers per buffer tube. 6 = 6 and T = 12.
- (28) Replace blank with either the letter M or H.
- (29) Cable contains no dielectric central strength member. Dielectric strength members are embedded in the jacket.
- (30) Replace blank with the letter A to indicate single jacketed cable or the number 2 to indicate double jacketed cable.

pl - Splice Closure

<u>Manufacturer</u>	<u>Max. Cable Dia.(6)</u>	<u>Straight</u>	<u>Branch</u>	<u>Encapsulant⁽²⁾</u>
<u>a - Aerial Splice Closure for Copper Cables</u>				
<u>Free-Breathing</u>				
3M Company	1.60"	SLiC 2X19 FB	SLiC 2X19 FB	--
	1.60"	SLiC 2X29 FB	SLiC 2X29 FB	--
	2.60"	SLiC 3X33 FB	SLiC 3X33 FB	--
	3.00"	SLiC 5X33 FB	SLiC 5X33 FB	--
	3.80"	SLiC 7X33 FB	SLiC 7X33 FB	--
	3.80"	SLiC 9X36 FB	SLiC 9X36 FB	--
	1.50"	GATM92000	GATM92000	--
	2.50"	GATM95000	GATM95000	--
	4.00"	GATM97000	GATM97000	--
Thomas&Betts	1.00"	C-3500	C-3500	--
	1.50"	C-3501	C-3501	--
	1.75"	C-3502	C-3502	--
	2.125"	C-3503	C-3503	--
	2.75"	C-3504	C-3504	--
	3.125"	C-3505	C-3505	--
	4.50"	C-3506	C-3506	--
	6.00"	C-3507	C-3507	--
	7.50"	C-3509	C-3509	--
	9.00"	C-3508	C-3508	--
Tyco Electronics	0.75"	TRAC - AA	TRAC - AA	--
	1.26"	TRAC - A	TRAC - A	--
	1.89"	TRAC - B	TRAC - B	--
	2.56"	TRAC - B+	TRAC - B+	--
	3.27"	TRAC - C	TRAC - C	--
URASEAL	1.2"	CA1900WE-A1S	CA1900WE-A1S	--
	1.8" *	CA1900WE-B1S	CA1900WE-B1S	--
	2.5" *	CA1900WE-C1S	CA1900WE-C1S	--

*The branch type will accommodate maximum cable dia. of 2.2" and 3.0", respectively.

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pl - Splice Closure

<u>Manufacturer</u>	<u>Max. Cable Dia.⁽⁶⁾</u>	<u>Straight</u>	<u>Branch⁽⁴⁾</u>	<u>Encapsulant⁽²⁾</u>
----------------------------	---------------------------------------------	------------------------	------------------------------------	-----------------------------------------

a - Aerial Splice Closure for Copper Cables

Pressurized

3M Company (510 Version)	1.0" 1.0" 1.6" 2.9" 3.5" 3.5" 4.5"	2X2AA 2Y2AA 2A2 2B2 2C2 2D2 2E2	2X2AA 2Y2AA 2A2 2B2 2C2 2D2 2E2	-- -- -- -- -- -- --
Preformed Line Products	2.2" 4.1" 6.85" 4.1" 6.85" 10.1" 10.1" 10.1" 10.1"	8006021 8006022 8006023 8006024 8006025 8006177 8006219 8006220 8006221	8006021 8006022 8006023 8006024 8006025 8006177 8006219 8006220 8006221	-- -- -- -- -- -- -- -- --

b - Buried Splice Closure for Copper Cables

Filled

3M Company	0.58" 1.0" 1.2" 1.5" 1.7" 2.0" 2.4" 3.33" 3.3" 3.6" 3.8"	8981-4462/GEL 8982-4462/GEL -- 8983-4462/GEL -- 8984-4462/GEL 8985-4462/GEL 8986-4462/GEL -- -- BB2 x 24 4462/GELLA SC, DC-LHS BB3 x 24 4462/GELLA SC, DC-LHS BB4 x 24 4462/GELLA SC, DC-LHS BB5 x 26 4462/GELLA SC, DC-LHS -- BB6 x 26 4462/GELLA 2DC-LHS BB7 x 26 4462/GELLA 2DC-LHS BB9 x 26 4462/GELLA 2DC-LHS	-- -- BB2 x 24 4462/GELLA SC, DC-LHS -- BB3 x 24 4462/GELLA SC, DC-LHS BB4 x 24 4462/GELLA SC, DC-LHS BB5 x 26 4462/GELLA SC, DC-LHS -- BB6 x 26 4462/GELLA 2DC-LHS BB7 x 26 4462/GELLA 2DC-LHS BB9 x 26 4462/GELLA 2DC-LHS	8882GEL 8882GEL 8882GEL 8882GEL 8882GEL 8882GEL 8882GEL 8882GEL 8882GEL 8882GEL
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See page 2.1.5 for notes.

<u>Manufacturer</u>	<u>Max. Cable Dia.⁽⁶⁾</u>	<u>Straight</u>	<u>Branch</u>	<u>Encapsulant⁽²⁾</u>
<u>b - Buried Splice Closure for Copper Cables</u>				
<u>Filled</u> (Cont'd)				
Prefomed Line Products	2.2" 4.1" 4.1" 7.1" 7.1" 7.1" 10.1" 10.1" 10.1"	8006287 8006288 8006289 8006290 9006291 8006292 8006293 8006294 8006295	8006287 8006288 8006289 8006290 8006291 8006292 8006293 8006294 8006295	RD RD RD RD RD RD RD RD RD
Tyco Electronics	.35" .48" .48" .48" .48" 1.10" 1.10" 1.85" 1.85" 2.00" 2.00"	XAGA 1650-S XAGA 1650-A XAGA 1650-AA XAGA 1650-A2 XAGA 1650-A4 XAGA 1650-B2 XAGA 1650-B4 XAGA 1650-C2 XAGA 1650-C4 XAGA 1650-D2 XAGA 1650-D4	XAGA 1650-S XAGA 1650-A XAGA 1650-AA XAGA 1650-A2 XAGA 1650-A4 XAGA 1650-B2 XAGA 1650-B4 XAGA 1650-C2 XAGA 1650-C4 XAGA 1650-D2 XAGA 1650-D4	CasChem 165 CasChem 165
Tyco Electronics (CERTI-SEAL)	Series 6 & 59 Series 7 & 11 .29 - .46 (Tel.) & Series 6, 7, 11, 59 (Coax) .29 - .46 .29 - .46 .35 - .57	569224-1 569661-1 569671-1 569579-1 1116449-1 1217195-1		Sealant 20 Sealant 20 Sealant 20 Sealant 20 Sealant 20 Sealant 20

c - Underground Splice Closure (Manhole) for Copper Cables

Filled

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pl

pl - Splice Closure

<u>Manufacturer</u>	<u>Max. Cable Dia.⁽⁶⁾</u>	<u>Straight</u>	<u>Branch</u>	<u>Encapsulant⁽²⁾</u>
<u>c - Underground Splice Closure (Manhole) for Copper Cables</u>				
<u>Pressurized</u>				
3M Company (510 Version)	2.9" 3.5" 3.5" 1.0" 1.0" 1.6" 4.5"	2B2 2C2 2D2 2X2AA 2Y2AA 2A2 2E2	2B2 2C2 2D2 2X2AA 2Y2AA 2A2 2E2	-- -- -- -- -- -- --
Preformed Line Products	2.2" 4.1" 6.85" 4.1" 6.85" 10.1" 10.1" 10.1"	8006021 8006022 8006023 8006024 8006025 8006219 8006220 8006221	8006021 8006022 8006023 8006024 8006025 8006219 8006220 8006221	-- -- -- -- -- -- -- --
Thomas&Betts	1.0" 1.6" 2.2" 3.0" 3.0"	C-5100 C-5101 C-5102 C-5103 C-5104	C-5105 C-5106 C-5107 C-5108 C-5109	-- -- -- -- --

d - Buildings and Central Office Vault Splice Closure for Copper Cables⁽³⁾

		<u>Non-Filled</u>	
		<u>Non-Flame Retardant⁽⁹⁾</u>	<u>Flame Retardant</u>
3M Company (Kohler & Besser)	K & B Series 2 * 2 (*)		K&B Series ⁽⁵⁾ 2 * 4 (*)
Preformed Line Products	8006 Series		8006 FR Series

*Insert inner diameter and cover length identifying data according to manufacturer's instructions.

See page 2.1.5 for notes.

pl - Splice Closure

<u>Manufacturer</u>	<u>In-Line</u>	<u>Butt</u>	<u>Branch</u>	<u>Encapsulant⁽²⁾</u>	<u>Maximum Splice Capacity⁽⁸⁾</u>
e - Aerial Splice Closure for Fiber Optic Cables⁽¹⁾					
<u>Filled</u>					
Preformed Line Products	8001006	8001005	8001006	RD	72
Tyco Electronics	--	FOSC450-B6-NT-0-B3V-RUS FOSC450-D6-NT-0-D6V-RUS	FOSC450-B6-NT-0-B3V-RUS FOSC450-D6-NT-0-D6V-RUS	GEL GEL	144 576
<u>Non-Filled⁽⁷⁾</u>					
AFL	LG-50 -- -- -- -- LG-410 LG-420 LG-500 LG-600	LG-50 LG-100 LG-200 LG-300 LG-300XL LG-410 LG-420 LG-500 LG-600	- LG-100 LG-200 LG-300 LG-300XL LG-410 LG-420 LG-500 LG-600	-- -- -- -- -- -- -- -- --	18 36 96 384 864 72 12 72 288
3M Company	-- -- 2178S 2178LS	FD06 FD08 2178S 2178LS	FD06 FD08 2178S 2178LS	-- -- -- --	48 96 96 480
Multilink Broadband (Starfighter)	1120F-GK01 2000F-GK01	1120F-GK01 2000F-GK01	1120F-GK01 2000F-GK01	-- --	24 72
Preformed Line Products	-- 8006661 8006659 8006660	8006692 8006661 8006659 8006660	8006692 8006661 8006659 8006660	-- -- -- --	24 48 144 288
Tyco Electronics		FOSC400-A4-NT-0-NGV-RUS FOSC400-B2-NT-0-NGV-RUS FOSC400-B4-NT-0-NGV-RUS FOSC400-D5-NT-0-NGV-RUS	FOSC400-A4-NT-0-NGV-RUS FOSC400-B4-NT-0-NGV-RUS FOSC400-B4-NT-0-NGV-RUS FOSC400-D5-NT-0-NGV-RUS		48 96 96 576

f - Buried Splice Closure for Fiber Optic Cables⁽¹⁾

<u>Filled</u>					
3M Company	2177-R	2177-R	2177-R	8882	64
Preformed Line Products	8001006	8001005	8001006	RD	72
Tyco Electronics	--	FOSC450-B6-NT-0-B3V-RUS FOSC450-D6-NT-0-D6V-RUS	FOSC450-B6-NT-0-B3V-RUS FOSC450-D6-NT-0-D6V-RUS	GEL GEL	144 576

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pl - Splice Closure

Manufacturer

**g - Buildings and Central Office
Vault Splice Closure for Fiber Optic Cables**

Non-Filled

	<u>Non-Flame Retardant⁽⁹⁾</u>	<u>Flame Retardant</u>
3M Company	2178S	2178 FOSC
Lucent Technologies	--	UCB1
Preformed Line Products	8006659 8006660 8006661	8001010 8001011

- Notes:**
- (1) Fiber organizer trays shall be ordered in accordance with manufacturer's instructions.
 - (2) The encapsulant is a component part of the splice closure system and shall be provided by the closure manufacturer. The encapsulant is not accepted on an individual basis.
 - (3) The main cable diameter, cable configuration (number of cables, pair count and gauge), and splice bundle diameter should be specified by the engineer.
 - (4) 3M Better Buried closures are accepted for Branch splicing only.
 - (5) For vertical installations order standard closure with "5925 FireBarrier Shield."
 - (6) Metric sizes available for the following manufacturers: 3M.
 - (7) These closures may also be installed in pedestals.
 - (8) Maximum capacity for fusion splices.
 - (9) Non-flame retardant cases shall not be placed in a building or central office, they may be placed in a cable vault.

hc - Underground Conduit

<u>Manufacturer</u>	<u>Type Conduit</u>	<u>Catalog Number</u>
Allwire, Inc.	Flexible plastic	ALLDUCT
American Pipe & Plastics	Plastic Plastic Plastic	Type B, C, and D Type EB and DB PVC Multi-Duct (2,3,4 and 6-way)
Americon International	Flexible plastic Plastic	HDPE Duct PVC Type C
Apache Plastics, Inc.	Plastic	Type EB and Type DB
Arnco	Flexible plastic	HDPE Conduit
Bristolpipe	Plastic Plastic	Type B, C, and D Type EB and Type DB
Can-Tex	Plastic Plastic	Type EB and Type DB Type B, C, and D
Carlon/Pyramid	Plastic Plastic (Telephone Duct) Plastic Flexible Plastic Plastic	Type EB, Type DB Type B ⁽¹⁾ , Type C ⁽¹⁾ , and Type D ⁽¹⁾ Multi-Gard ⁽¹⁾ HDPE Conduit ⁽²⁾ BORE-GUARD (Sch. 40 & 80) ⁽²⁾
Certain-Teed Products Corp.	Plastic	Type EB and Type DB
CSR Polypipe	Flexible plastic	HDPE Duct
Dura-line	Flexible plastic	HDPE Duct
Endot Industries	Flexible plastic	HDPE Duct
Flying "W" Plastics	Flexible plastic	HDPE Duct
Freedom Plastics, Inc.	Plastic	Type C
Heritage Plastics	Plastic	PVC Types EB, DB, Sch. 40 and Sch. 80
Hurlbut Plastic Pipe	Plastic	Type C
IPEX, Inc.	Flexible plastic (Fibertel)	EPEC-(B, 40, SDR11, 80)-HDPE 1" – 4"
J-M Manufacturing Company	Plastic	Types C, EB, and DB
Moore DP, LLC	Flexible plastic	HDPE Duct
National Pipe & Plastics, Inc.	Plastic Plastic	Type EB and Type DB Type B and Type C

See page 2.2.1 for notes.

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hc - Underground Conduit

<u>Manufacturer</u>	<u>Type Conduit</u>	<u>Catalog Number</u>
Northern Pipe Products	Plastic	Type B, C, and D
OMNI	Flexible plastic Plastic	HDPE Duct Multiple plastic conduit (3 & 4 Way)
OSI Plastics	Flexible plastic	EPEC-A-HDPE 1" – 4"
Performance Pipe	Flexible plastic	DRISCOPLEX Duct
Petroflex	Flexible plastic Flexible plastic	HDPE Duct Corrugated HDPE Duct
PWPipe	Plastic Flexible plastic	PVC Types EB, DB, and Sch. 40 HDPE Coiled Duct
Queen City Plastics	Plastic	Type EB and Type DB
Sedco	Plastic	Type EB and Type DB
Southern Pipe, Inc.	Plastic	PVC Types EB, DB, and Sch. 40
Summit Sales, Inc.	Plastic	Type B and Type C
Tamaqua Cable Products	Flexible plastic	HDPE Duct
Wesflex	Flexible plastic	Flex-Con

Note: For fiber and plastic conduit, Type I, Type B or Type EB is for concrete encasement and Type II, Type C or Type DB may be directly buried. Schedule 40 is a high strength conduit that may be used for concrete encasement or direct burial. Type D is for exposed installation, as on bridges.

⁽¹⁾Filament wound fiberglass/epoxy conduit.

⁽²⁾Carlon brand only.

⁽³⁾Pyramid brand only.

er - Cable Enclosures

er-a Ready Access Enclosures (Enclosures Only)

Lashed Cables

<u>Manufacturer</u>	<u>Main Cable Dia. Range</u>	<u>Straight</u>	<u>Branch</u>
3M	0.40-4.00"	SLIC ⁽⁵⁾	SLIC ⁽⁵⁾
Marconi Communications	0.4-1.2" 1.2-2.0" 2.0-3.0"	100 MB-P10318 200MB-P10709 430	100 MBY-P10318 200MBY-P10709 430Y
Thomas&Betts	0.50-2.20"	Termax C-2280	-

See page 2.3.2 for notes.

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er - Cable Enclosures

er-b Ready-Access Enclosures (Enclosures Only)

Strand-mounted, with two branch entrances (for lashed cables)

<u>Manufacturer</u>	<u>Type E</u>		<u>Type F</u>	
Diameter of main:		1.2" Maximum		2.2" Maximum
Diameter of branch:		0.75" Maximum		1.6" Maximum
Type of strand:	Galvanized Steel	Alum.-Clad Steel	Galvanized Steel	Alum.-Clad Steel
Marconi Communications	200MBY	200MBY	200MBY	200MBY

er-c Ready-Access Enclosures e/w with IDC Terminal Blocks
(Fixed Count Enclosures)

Strand-mounted, with two branch entrances (for lashed cables)

Filled Unprotected

	<u>Main Cable Dia. Range</u>	<u>Branch Cable Dia. Range</u>	<u>Series</u>
3M Company	0.40-4.00" 0.30-4.00" ⁽¹⁾	- 0.30-4.00"	SLIC ⁽²⁾⁽⁶⁾ GATM
Thomas&Betts	0.50-2.20"	-	Termax
Tyco Electronics	0.55-1.90"	0.00-1.50"	DTerminator 2 ICT

See page 2.3.2 for notes.

er - Cable Enclosures

er-d Ready-Access Enclosures e/w Binding Post Terminal Blocks (Fixed Count Enclosures)

Strand-mounted, with two branch entrances (for lashed cables)

Manufacturer

Filled Unprotected

	<u>Main Cable Dia. Range</u>	<u>Branch Cable Dia. Range</u>	<u>Variable</u>
Marconi Communications	0.40-1.20" 1.20-2.20" 2.00-3.00"	0.40-0.80" 0.40-1.60" 1.10-2.20"	100MBY ⁽³⁾ 200MBY ⁽³⁾ 430MBY ⁽³⁾

Filled Protected

	<u>Main Cable Dia. Range</u>	<u>Branch Cable Dia. Range</u>	<u>Variable</u>
Marconi Communications	0.40-1.20" 1.20-2.20" 2.00-3.00"	0.40-0.80" 0.40-1.60" 1.10-2.20"	100MBY ⁽⁴⁾ 200MBY ⁽⁴⁾ 430MBY ⁽⁴⁾

Notes:

⁽¹⁾The diameter range shown only includes the unprotected versions of the RGTA-type terminal blocks.

⁽²⁾Specify 3M PSI or Raychem (Tyco) terminal blocks when ordering.

⁽³⁾May be ordered with up to 24 pairs using the 145BG Marconi Communications terminal block only.

⁽⁴⁾May be ordered with up to 12 pairs using the 281G, 283G, 381G, and 383G Marconi Communications terminal blocks only.

⁽⁵⁾Includes the following catalog numbers only: 328 & 530 MT, 328 & 530-MT/SES, 328 & 530-MTA/SES, 328 & 530-MTC/RES, 328 & 530-MTC/SES, and 328 & 530-MTPI/SES.

⁽⁶⁾Includes the following catalog numbers only: 328-G, 328-PI/SES, and 530-PI/SES.

hh - Handholes⁽¹⁾⁽²⁾

Handholes for Copper Systems

<u>Manufacturer</u>	<u>Catalog Number</u>
Armorcast	6001946 (13x24) 6001640 (17x30) 6001974 (24x36) 6001436 (36x60)
Brooks Products	1324 1730
Carson Industries	1730-13B
CDR Systems (Homac)	TA-1324 TA-1730 TA-3660 TA-2436 TA-3048W TA-3048 TA-3060
Charles Industries, Ltd.	FMH 361 FMH 362 FMH 363
NewBasis	S1324 S1730 FC243618-10K FC304818-10K FC304836-10K FC366018-20K FC366036-20K
Northwest Pipe & Tank, Inc.	#8-C124 (4'x10"x3'4"x2'6") ⁽⁴⁾
Pen-Cell Plastics	PE-10 PE-20 (Restricted to cable sizes up to 100 pairs) PE-36 PE-6HD PE-9HD PE-14HD PE-30HD PE-20HD PE-20U PE-20F PE-30U PE-30F PEM Series
Quazite	PC1324 PC1730 PX1324 PX1730
TDB Communications (Common Ground Enclosure)	TDB-GB-T ⁽⁵⁾
Tunnel Mill Polymer, Inc.	R264836

See page 2.4.2 for notes.

hh - Handholes⁽¹⁾⁽²⁾

Handholes for Fiber Optic Systems

<u>Manufacturer</u>	<u>Catalog Number</u>
Armorcast	6001974 (24x36) 6001430 (30x48) 6001742 (30x60) 6001436 (36x60) 6001691 (39x30DI)
CDR Systems (Homac)	TA-1730F TA-2436F TA-3048WF TA-3048F TA-3060F TA-3660F TA-4848F TA-4872F TA-4878F TA-4896F
Charles Industries, Ltd.	FMH 361 FMH 362 FMH 363
Coastal Engineered Products	38-00520 38-00521 38-00522 38-00523
Moore Diversified Products, Inc.	MOV-2S/D ⁽³⁾
NewBasis	FC132418-20K FC173018-20K FC243618-20K FC304818-20K FC304836-20K SG5400-SW FC366018-20K FC366036-20K
Northwest Pipe & Tank, Inc.	#8-C124 (4'10"x3'4"x2'6") ⁽⁴⁾
Pen-Cell Plastics	PE-14HD PE-20HD PE-20U PE-20F PE-30HD PE-30U PE-30F PE-36HD PE-36A PEM Series
Quazite	PG2436 PG3048 LG3060 LG3660 LR2732
Tunnel Mill Polymer, Inc.	R264836

See page 2.4.2 for notes.

2.4.2

7-03

hh

Notes: (1) Not for use in areas subject to vehicular traffic, unless otherwise noted.

(2) Consult the manufacturer for ordering procedures for handhole depth and lid/cover locking devices and load bearing capacity.

(3) Rated for use in areas subject to vehicular traffic.

(4) Light vehicular traffic only (H10)

(5) Lugs kits available from TDB.

se - Buried Plant Housings

(Complies with 7 CFR 1755.910)

Type BD Pedestals

Listed manufacturers are accepted to supply housing types as indicated by X's.

Type H Pedestals

<u>Manufacturer</u>	<u>Series</u>	<u>Notes</u>	Pedestal Mounted				Pole Mounted		
			<u>BD3</u>	<u>BD4</u>	<u>BD5</u>	<u>BD7</u>	<u>BD3A</u>	<u>BD4A</u>	<u>BD5A</u>
Channell	CFP/EPT 600	(15)	X	-	-	-	-	-	-
	CFP/EPT 800	(15)	-	X	-	-	-	-	-
	CFP/EPT 1000	(15)	-	-	X	-	-	-	-
	MAH 1420	(15)	-	-	-	X	-	-	-
Charles Industries, Ltd.	(Pedlock BD)	(2)(3)(15)	X	X	X	X	X	X	X
Corning Cable Systems	(BD)	(1)(2)(3)	X	X	X	X	X	X	X
Marconi Communications	(UPC, FLOODPLUG, ProFORM)	(1)(2)(3)(7)(10)	X	X	X	X	X	X	X

See page 2.5.2 for notes.

2.5.1
4-03
se

se - Buried Plant Housings
(Complies with 7 CFR 1755.910)

Type BD Pedestals

Listed manufacturers are accepted to supply housing types as indicated by X's.

<u>Manufacturer</u>		<u>Designation</u>												
	<u>Series</u>	<u>Notes</u>	<u>Pedestal Mounted</u>			<u>Pole Mounted</u>			<u>Type M Pedestals</u>			<u>Pole Mounted</u> <u>(Increased Hgt. Above Grd.)</u>		
			<u>BD14</u>	<u>BD15</u>	<u>BD16</u>	<u>BD14A</u>	<u>BD15A</u>	<u>BD16A</u>	<u>BD14AG</u>	<u>BD15AG</u>	<u>BD16AG</u>			
Channell	CFP/EPT 600		X	-	-	-	-	-	-	-	-			
	CFP/EPT 800		-	X	-	-	-	-	-	-	-			
	CFP/EPT 1000		-	-	X	-	-	-	-	-	-			
Charles Industries, Ltd.	(Pedlock BD)	(2)(3)	X	X	X	X	X	X	X	X	X			
Marconi Communications	(FLOODPLUG, ProFORM)	(2)(3)(10)	X	X	X	X	X	X	X	X	X			

Large Count Splice Cabinets

			<u>BD6000</u>	<u>BD8000</u>	<u>BD10000</u>
Marconi Communications	(UPCBD)	(2)(3)(10)(14)	-	X	-

See page 2.5.2 for notes.

se - Buried Plant Housings
(Complies with 7 CFR 1755.910)

Type BDS Serving Area Interface Cabinet⁽⁴⁾

<u>Manufacturer</u>	<u>Designation</u>	
	<u>Terminal Type⁽⁵⁾</u>	<u>Cabinet Series</u>
3M	3M SS Block	4000 ⁽⁶⁾ 4300 ⁽⁶⁾ 4220 ⁽⁶⁾ 4230 4900
Marconi Communications	RLS Module	UPC/BDS RSK/RSL Starburst Aerial UltraCab
Tyco Electronics	HubSnap	NGXC ⁽¹²⁾⁽¹⁶⁾ BK/BL ⁽¹¹⁾⁽¹⁶⁾

Fiber Optic Splice Case Housings

	<u>Stake Mounted</u>	<u>Pad Mounted</u>	<u>Pole Mounted</u>
Corning Cable Systems	OFC-BD7 ⁽⁸⁾⁽⁹⁾	OFC-BD7 ⁽⁸⁾⁽⁹⁾	OFC-BD7 ⁽⁸⁾
Marconi Communications	OPFO-BD7PD ⁽⁸⁾⁽⁹⁾	OPFO-BD7PD ⁽⁸⁾⁽⁹⁾	OPFO-BD7PL ⁽⁸⁾

- Notes:**
- (1)Internal offset brackets for the BD3, BD4, and BD5 sizes are available upon request.
 - (2)Grounding connectors for field mounting within the housings for terminating #6 AWG solid copper ground wire are available upon request.
 - (3)Good housekeeping panels are available upon request, sizes BD3 and above. When ordering, suffix the catalog number with the letter "H".
 - (4)SAI housings equipped with two doors, front and back are also available upon request.
 - (5)Use the block or module recommended by the SAI manufacturer.
 - (6)Only the 4065, 4295, and 4365 may be pole mounted.
 - (7)BD7 may be pad mounted.
 - (8)Order mounting hardware for the intended splice case in accordance with the manufacturer's instructions.
 - (9)Order pad or stake mounting hardware in accordance with the manufacturer's instructions.
 - (10)For additional bonding and grounding requirements, extension brackets GBREXT, GBREXTKIT, and GBRALT are available upon request.
 - (11)Pole Mounted Only.
 - (12)Beige color may be used.
 - (14)UPCBD8000 may be stake mounted.
 - (15)These pedestals are type "M" pedestals (dome) that meet the functional criteria of type "H" pedestals.
 - (16)If ordered stubbed, cables must be RUS accepted.

sj - Wall Mountable Central Office Splice Housings⁽²⁾

(splice housings for copper cables)

<u>Manufacturer</u>	<u>Designation</u>		
	<u>Catalog Number</u>	<u>Tip Cable Openings</u>	<u>Cable Capacity</u>
Marconi Communications	CRF54ARV ⁽¹⁾ CRF66ARV ⁽¹⁾	54 66	5400 6600

(splice housings for fiber optic cables)

	<u>Catalog Number</u>		<u>Fiber Capacity</u>
		<u>Mech. Splices</u>	<u>Fusion Splices</u>
ADC	FPL-SR2000 ⁽¹⁾	96	96
3M	8570 ⁽¹⁾	144	192
Fiber Optic Network Solutions Corp.	WSU-72 ⁽³⁾	72	72

See page 2.5.4 for notes.

sj - Wall Mountable Central Office Splice Housings⁽²⁾
(splice housings with patch panels for fiber optic cables)

<u>Manufacturer</u>	<u>Designation</u>	
	<u>Catalog Number</u>	<u>Max. Fiber Terminations</u>
ADC	FIP ⁽³⁾⁽⁵⁾ FIPL ⁽³⁾⁽⁵⁾ FDP ⁽¹⁾ FMPS ⁽¹⁾⁽⁴⁾ FMPL ⁽¹⁾⁽⁴⁾ FCO-08 ⁽⁵⁾ FCP-12 ⁽⁵⁾	12 24 24 36 72 8 12
Americable, Inc.	FLP-1 ⁽¹⁾⁽⁴⁾ FLP-1W ⁽¹⁾⁽³⁾	296 24
3M	8423 ⁽¹⁾⁽⁴⁾ 8425 ⁽¹⁾⁽⁴⁾ 8432 ⁽¹⁾⁽³⁾ 8434 ⁽¹⁾⁽³⁾ 8436 ⁽¹⁾⁽³⁾	48 144 12 24 48
Fiber Optic Network Solutions Corporation	LX-1012 ⁽³⁾ LX-1024 ⁽³⁾ LX-1048 ⁽³⁾ LX-1096 ⁽³⁾ LX-2012 ⁽⁴⁾ LX-2024 ⁽⁴⁾ LX-2036 ⁽⁴⁾ LX-2048 ⁽⁴⁾ LX-2072 ⁽⁴⁾ LX-2144 ⁽⁴⁾	12 24 48 96 12 24 36 48 72 144
Porta Systems	CPS-12 ⁽⁵⁾ CPS-24 ⁽⁵⁾ FOCUS ⁽¹⁾ FOCUS ⁽¹⁾	12 24 48 72

Notes: ⁽¹⁾ Recommended for use only in central offices with restricted access to unauthorized personnel.

⁽²⁾ Consult the manufacturer for ordering procedures concerning splice capacity, connector options, pigtailed, or jumpers and stub options.

⁽³⁾ Accepted for wall mounting only.

⁽⁴⁾ Accepted for rack mounting only.

⁽⁵⁾ UL listed and may also be used as a Fiber Optic Cable Building Entrance Terminal.

2.5.5
6-03
sk

sk - Pedestal Restricted Access Inserts⁽¹⁾

<u>Manufacturer</u>	<u>Catalog No.</u>	<u>Max. Splice</u>	<u>Maximum Splice Sizes</u>	
		<u>Diameter</u>	<u>25xModules</u>	<u>Single Pair Connector</u>
3M	4604	64mm (2.5 in.)	100-Pair	50-Pair
	4606	99mm (3.9 in.)	300-Pair	100-Pair
	4608	135mm (5.3 in.)	600-Pair	300-Pair
	4634	57mm (2.25 in.)	100-Pair	50-Pair
	4635	102mm (4.0 in.)	300-Pair	100-Pair
	4636	137mm (5.4 in.)	600-Pair	300-Pair
	4636-XL	140mm (5.5 in.)	900-Pair	400-Pair
	4637-XL	191mm (7.5 in.)	1200-Pair	400-Pair
Marconi Communications	RSR3100	63.5mm (2.5 in.)	150-Pair	150-Pair
	RSR4200	63.5mm x 101.6mm (2.5 in. x 4 in.)	225-Pair	225-Pair
Tyco Electronics	PedCap-RE-2G	48mm (1.9 in.)	20-50-Pair	25-50-Pair
	PedCap-RE-3G	76mm (3.0 in.)	25-200-Pair	25-200-Pair
	PedCap-RE-4G	84mm (3.3 in.)	100-400-Pair	100-400-Pair
	PedCap-RE-6G	114mm (4.5 in.)	200-900-Pair	200-900-Pair
	GT-3 ⁽²⁾	66mm (2.6 in.)	25-100-Pair	25-100-Pair
	GT-4 ⁽²⁾	91mm (3.6 in.)	50-400-Pair	50-400-Pair
	GT-6 ⁽²⁾	109mm (4.3 in.)	100-900-Pair	100-900-Pair
Uraseal	SAP-IICPR3N	76mm (3.0 in.)	200-Pair	200-Pair
	SAP-IICPR4N	102mm (4.0 in.)	300-Pair	300-Pair
	SAP-IICPR5N	127mm (5.0 in.)	400-Pair	400-Pair

Notes: ⁽¹⁾Pedestal restricted inserts should not be filled. Splices that require filling should be placed in a splice case.

⁽²⁾Maximum splice sizes will vary with type of connector and/or gauge of cable used.

2.6
1-03
ps;sp

ps - Buried Plant Housing Sealer

<u>Manufacturer</u>		<u>Catalog Number</u>
Courtaulds Aerospace	Semco PR-820-2 Semco PR-820-6 Semco PR-820-8 Semco PR-820-20 Semco PR-820	62 Cu. In. 224 " " 336 " " 805 " " 4200 " "
W. R. Grace	Polycel 100	
J.A.D.E., Ltd.	PIG 375 3 oz Volume " 470 4 " " " 650 6 " " " 825 8 " " " 1050 10 " " " 1080 16 " "	54 " " 84 " " 126 " " 171 " " 324 " " 540 " "
3M	4411 - A Bag B Bag C Bag 750 Gram Can	45 " " 95 " " 250 " " 450 " "

sp - Duct Sealer

<u>Manufacturer</u>		<u>Catalog Number</u>
Courtaulds Aerospace	Semco PR-821-2 Semco PR-821-6 Semco PR-821-8 Semco PR-821-20 Semco PR-821-1	27 Cu. In. 75 " " 110 " " 317 " " 3337 " "
3M	4416	
Tyco Electronics	TDUX ⁽¹⁾	-

Notes:

⁽¹⁾Follow manufacturer's recommendation when ordering for appropriate duct sizes and/or maximum cable(s) outside diameters.

hm - Precast Concrete Manholes⁽¹⁾

<u>Manufacturer</u>	<u>Base Size</u>	<u>Catalog Number</u>
Advance Concrete Products	12' x 5' x 6'-6" 12' x 6' x 7' 8' x 4' x 6' 8' x 4' x 6' 12' x 6' x 7' 12' x 6' x 7' 12' x 6' x 9'-6" 4' x 4' x 6'-9"	A Manhole A-1 " SA " SJ " J3-1 " High-Mount T Carrier Manhole Telephone Vault
Amcor Inc.	3.5' x 5' x 3' 3.5' x 5' x 3' 4' x 6' x 7' 6' x 8' x 7' 6' x 12' x 7'	UV 3.553-REA-H UV 3.553-REA-L UVMB467 UVMB687-PM UVMB6127
Armorcast	48" x 48" x 48"	A6000514HTAPC ⁽⁴⁾
Brooks Products	4' x 4' 4' x 8' 4'-6" x 8'-6" 5' x 10'-6" 5' x 12' 6' x 12' 6' x 12'	REA 300FPB42T REA 4080FM72 REA 510FM78 REA 650FM78 REA 6000FM78 REA 6000FM84 REA 6000DM84
Capitol Concrete Products, Inc.	4' x 8' x 3' 4' x 8' x 6' 4' x 8' x 7' 4' x 8' x 8'	CCPMH 483 CCPMH 486 CCPMH 487 CCPMH 488
Elk River Concrete Products Company of Montana	5' x 5'-2" 5' x 5'-2" 5' x 9'-3" 5' x 9'-3" 5' x 13'-4" 5' x 13'-4" 4' x 6' 48" ROUND	EV 505.2-S EV 505.2-D EV 509.3-S EV 509.3-D EV 513.4-S EV 513.4-D EV 406 EV 48-D
Foley-Brogdon	2' x 2' 3' x 3' 4'-2" x 4'-2" 6' x 6' 4'-6" x 8'-6" 5' x 10'-6" 5' x 10'-6" 6' x 8' 6' x 12' 8' x 8' 9' x 12' 6' x 10'	Model 222 Model 333 Model 444 Model 6060 Model 8545 Model 1050 Model 1050S Model 8060 Model 1260 Model 8080 Model 1290 Model 1060

See page 2.7.3 for notes.

hm - Precast Concrete Manholes⁽¹⁾

<u>Manufacturer</u>	<u>Base Size</u>	<u>Catalog Number</u>
Hartford Concrete Products ⁽²⁾	5' x 10' 4' x 8' 4' x 4'	REA 10-5 Series ⁽²⁾ REA 8-4 Series REA 4-4-4
Hawaii Precast, Inc.	3' x 5' 4' x 6'-6" 5' x 10'-6" 6' x 12'	3x5 ⁽³⁾ 4x6 5x10 6x12
Jensen Pre-Cast Concrete Products Co.	3' x 5' x 3' 3' x 6' x 3' 4' x 4' x 4' 4' x 6'-6" x 3' 4'-6" x 8'-6" x 6'-6" 5' x 10'-6" x 7' 6' x 12' x 7' 6' x variable x 9' 6' x variable x 9'	REA 3660-TA REA 3672-TA REA 4848 REA 466-TA REA PTS-65 REA 38-5706-U-7 REA 384-4046-1 REA PTS-69 REA PTS-69-I
A.C. Miller Concrete Products Inc.	3' x 3' 4' x 4' 4' x 6' 4' x 7'-9" 4'-6" x 10'-6" 5' x 12' 6' x 12' 6' x 6' 6' x 8' 5' x 10'-6" 8' x 8' 10' x 10'	REA-3x3 REA-4x4 REA-4x6 REA-18 REA-20 REA-38Y REA-38Y REA-6x6 REA-6x8 REA-5x10.6 REA-8x8 REA-10x10
NewBasis	2'x2'x2', 2.5', & 3' 2'x3'x3' 3'x5'x3' 3'x6'x4.25' 3'x3'x3' 4'x4'x4', 5', 6', 7', 8' 4'x4'x4.25' 4'x5'x4.25' 4'x6.5'x4' 4'x6.5'x7' 4'x8'x4', 5', 6', 7', 8' 4'x8'x7' 5'x5'x5', 6' 5'x7'x7' 5'x10.5'x6', 6.5', 7' 6'x8'x4' 6'x8'x7' 6'x12'x7' 6'x12'x7' 6'x15'x4', 5', 6', 7', 8' 7'x7'x4', 5', 6', 7', 8' 8'x10'x4', 5', 6', 7', 8' 8'x8'x4', 5', 6', 7', 8' 9.5'x9.5'x4', 5', 6', 7', 8' 10'x10'x4', 5', 6', 7', 8' 12'x12'x4', 5', 6', 7', 8'	(Vault Series) 1018, 1019, 1020 1022 35-H36-B GL3x6x51 1145 44-M-1PC GL4x4x51 GL4x5x51 GL4x6.5x48 GL4x6.5x84 48-M GL4x8x84 1605, 1610 GL5x7x84 1665, 1666, 1667 GL6x8x48 GL6x8x84 1830-1 GL6x12x84 615-M 77-M 810-M 88-M 9595-M 1010-M 1212-M

See page 2.7.3 for notes.

2.7.2
1-03
hm

hm - Precast Concrete Manholes⁽¹⁾

<u>Manufacturer</u>	<u>Base Size</u>	<u>Catalog Number</u>
Northwest Pipe & Tank, Inc.	4'-10" x 4'-10" x 4' 7' x 5' x 7'	#8-C244 #8-C257 ⁽⁵⁾
Ornamental Poles, Inc.	6'-0" x 12'-0"	REA-Y
Pre Cast Concrete Company, Inc.	5'-10" x 10'-4" x 7'2"	Type AA
Pre-Cast Manufacturing Company	3'-6" x 6' 6' x 12' 5' x 10'	T-36656 T-6127 T-5107
R.C.P. Vaults (Division of Pacific International Pipe & Engineering, Inc.)	2'6" x 2'6" x 2' 2'3" x 5'2-1/2" x 2'6" 4'0" x 6'0" x 6'0" 5'0" x 9'0" x 7'2" 5'0" x 9'0" x 7'2" 5'8" x 11'2" x 7'5" 5'8" x 11'2" x 7'5" 6'0" x 12'0" x 7'0" 6'0" x 12'0" x 7'0" 7'0" x 12'0" x 7'6" 8'0" x 14'0"	76649 Handhole 25-TA Splicing Vault 466-TA 4484-TA 4484-TCA 5106-TA 5106-TCA 612-TA 612-TCA 712-CLS 814 (3)
Rotondo Precast	2' x 2' 3' x 3' 4' x 4' 4' x 6' 6' x 6' 6' x 8' 6' x 10' 6' x 12' 6' x 12' 6' x 12' 8' x 8'	RUS-22- RUS-33- RUS-44- RUS-46- RUS-66- RUS-68- RUS-610- RUS-612- -38Y RUS-6127- -OB RUS-6127- -SB RUS-88-
Southeast Precast Concrete Products Inc.	6' x 12' 4' x 8' 5' x 10' 4' x 4'	REA 127 REA 86 REA 510 REA 504

See page 2.7.3 for notes.

hm - Precast Concrete Manholes⁽¹⁾

<u>Manufacturer</u>	<u>Base Size</u>	<u>Catalog Number</u>
Utility Concrete	3' x 4' x 4'	34 1/4
	8' x 4' x 6'	84 1/4
	22" x 22" x 36"	23 6/8
	2' x 2' x 2'-10"	22 2/10
	4' x 4' x 4'	44 1/4
	4' x 4' x 6'	44 3/4
	10' x 5' x 7'	105 1/4
	12' x 6' x 7'	126 1/16
	12' x 6' x 10'	126 3/16
	12' x 6' x 12'	126 5/16
	15' x 6' x 9'	156 1/4
	15' x 6' x 12'-6"	156 2/4
Utility Precast Inc.	6' x 12'	A Series
	5' x 10'	B Series
	4-1/2' x 8-1/2'	C Series
Utility Vault	4' x 6'	466TA
	4'-2" x 4'-2"	504-LA
	4'-2" x 6'-6"	577-LA
	5'-10" x 10'-10"	510Y
	6'-10" x 12'-10"	38-612-Y
	2'3" x 5'2-1/2" x 2'4"	25 TA
	2'3" x 5'2-1/2" x 3'4"	253 TA
	3'1" x 6'7" x 4'1-1/2"	264 TA
	5' x 9' x 7'2"	4484-type
	5'4" x 9'4" x 7'6"	4686-type
	5'8" x 11'2" x 7'2"	5106-type
	6'1" x 11'7" x 7'5"	38Y-type
	8'8" x 10'8" x 8'6"	810 TA
	7'10" x 12'11" x 8'7"	712 LA
	8' x 14' x 6'6" through 12'	814-66 TA through 814-12 TA
	8' x 18' x 6'6" through 12'	818-66 TA through 818-12 TA
	3'8" x 5'8" x 4'9 1/2"	GTE35 Pullbox
	3'8" x 5'8" x 4'9 1/2"	GTE Intercept Pullbox
	4'10" x 6'10" x 7'6"	467-TA

- Notes:**
- (1)** Consult manufacturer for ordering procedure concerning depth of the hole (Headroom), type of manhole (A, J, L, T), and extension sections.
 - (2)** Equipped with 27-inch frame and cover made by Dewery Brothers Foundry.
 - (3)** This manhole comes with an option for a D and L Foundry A1381 cast iron cover with security bolts.
 - (4)** This manhole comes with Alhambra Foundry Cover, drawing No. A-1133.
 - (5)** This manhole can be 6 feet in height.

2.8
6-03
sd

sd - Mobile Home Posts

<u>Manufacturer</u>		<u>Catalog Number</u>
Charles Industries, Ltd.	3518 (Internally mounted protector)	3519 (Trailer mounted protector)
Corning Cable Systems	AMHP-1 (2)	-
Indiana Pressed Steel	THP-1E (1)	-
Marconi Communications	UNIPOST (2)	-

Notes: **(1)**Limited to use in noncorrosive areas only.

(2) Adjustable to 3 feet, 3-1/2 feet, and 4 feet.

2.9
7-03
wt

wt - Pole Mounted Wire Terminals

<u>Manufacturer</u>	<u>Catalog Number</u>						
	<u>wt-a Unprotected Filled Blocks</u>						
	<u>1-Pair</u>	<u>10-Pair</u>	<u>12-Pair</u>	<u>20-Pair</u>	<u>25-Pair</u>	<u>30-Pair</u>	<u>50-Pair</u>
Channell	--	--	--	--	BMT60925B7A1G01	--	BMT650B7A1
Marconi Communications	5533G	--	--	--	--	--	--
Thomas&Betts	--	--	--	--	C-2516 ⁽¹⁾	--	C-2518 ⁽¹⁾
Tyco Electronics (DTerminator 2)	--	--	DT2-PMT ⁽¹⁾				

wt-b Protected Filled Blocks

25-Pair

Thomas&Betts C-2517⁽¹⁾⁽²⁾

Note: (1)Order stub cable length in accordance with manufacturer's instructions.

(2)These protected blocks use the Marconi Communications 1557 (R-800) cable-class "medium duty" arrester.

2.10
10-03
drk

drk - Damage Repair Kits⁽¹⁾

<u>Manufacturer</u>	<u>Type Designation</u>
3M	4560 Armorcast Sheath Repair Kit 4561 Armorcast Sheath Repair Kit
Preformed Line Products	SERVICEAL Closure Series BLACK-JACK Closure Series
Thomas&Betts	Kold-N-Klose System

Note: ⁽¹⁾Damage repair kits are for RUS new construction purposes only.

2.11
6-03
oco

oco - Fiber Cable Slack Organizer

Manufacturer

Multilink Broadband

Tyco Electronics

Product Series

21__⁽¹⁾⁽²⁾ (Sno-Shoe)

Lightrax System

Notes:

⁽¹⁾Fill in blanks with available sizes - 10", 16", 21", 24".

⁽²⁾Available with ADSS Versions, staking kits, and extensions.

	Item <u>Designation</u>		Page
Connectors, shield bonding	gh		3.1
" splicing	cm		3.1.2
Harnesses, bonding connector	gs		3.3
" shield connector isolation	gt		3.3.2
Markers, cable.....	tm		3.2
Numerals, decal type	sm		3.5
Signs, warning.....	sm		3.5
Sleeves, filled plastic.....	sv		3.4

gh - Shield Bonding Connectors
(Complies with PE-33)

<u>Manufacturer</u>	<u>Catalog Number</u>			
	<u>gh-a Copper Cable and Wire Connectors</u>		<u>Service Wire Connectors</u>	
	<u>Cable Connectors</u>			
<u>Outside Cable Diameters</u>				
	<u>Less than 1.0 inch</u>	<u>1.0 to 1.5 inch</u>	<u>Greater than 1.5 inch</u>	
A.K. Stamping	400-366-332 ⁽²⁾ (8544 B Bond #1)	400-366-340 (8544 B Bond #2)	400-366-357 (8544 B Bond #3)	-
Electric Motion	EM2__(6)BM ⁽⁷⁾ EM2__(6)B1 ⁽⁸⁾	- EM2__(6)B2 ⁽⁹⁾	- EM2__(6)B3 ⁽¹⁰⁾	EM-3956__(1)(3)
3M	4462SN	4462SN	4462SN	-
Preformed Line Products	-	-	-	8000733 ⁽¹⁾ (Servi-Bond)

gh-b Armored Fiber Optic Cable Connectors

	<u>Outside Cable Diameters</u>	
	<u>Less than 0.75 inch</u>	<u>Greater than 0.75 inch</u>
A.K. Stamping	400366332-MB (Mini B Bond)	-
Electric Motion	EM2__(6)BM ⁽⁷⁾ EM2__(6)B1 ⁽⁸⁾	EM2__(6)B2 ⁽⁹⁾ EM2__(6)B3 ⁽¹⁰⁾
3M	4460D ⁽⁴⁾ 4460DFO ⁽⁵⁾	4460D ⁽⁴⁾ 4460DFO ⁽⁵⁾

See page 3.1.1 for notes.

3.1.1
10-03
gh

- Notes:**
- (1)For use only at station protector.
 - (2)Not to be used on cables less than 0.50 inches in diameter.
 - (3)Replace blank with either the letters H, R, RO, RR, RW, or RLB to indicate the type of mounting bracket to be used with the protector of the Network Interface Device (NID)
 - (4)To be used with armored fiber optic cables using the central strength member design.
 - (5)To be used with armored fiber optic cables using the strength member embedded in the outer jacket design.
 - (6)Replace blank with the number 0 to indicate one (1) stud or the letter B to indicate two (2) studs.
 - (7)For use with cables having outdoor diameters less than 0.5 inch.
 - (8)For use with cables having outdoor diameters equal to and greater than 0.5 inch but less than 0.8 inch.
 - (9)For use with cables having outside diameters equal to and greater than 0.8 inch but less than 1.6 inches.
 - (10)For use with cables having outside diameters equal to and greater than 1.6 inches.

3.1.2
1-03
cm

cm - Connectors

<u>Manufacturer</u>	<u>Catalog Number</u>
<u>Splicing Connectors for Copper Conductors⁽²⁾</u>	
	<u>Splicing Connectors (1 Conductor)</u>
	<u>Moisture Resistant</u> <u>Nonmoisture Resistant⁽¹⁾</u>
3M Company	Scotchlok™ UR2 " UCC ⁽⁴⁾ " UY2 " UB2A " 211
Tyco Electronics	552678-2(3 wts) 552795-4 1-552678-2 1-552795-4 552795-2 552966-4 552966-2 555790-2 553017-2 (Half-Tap ts) 60945-4 1-553017-2 60947-3 555790-1 555791-1 552965-2
	<u>Splicing Connectors (1-Pair)</u>
	<u>Moisture Resistant</u> <u>Nonmoisture Resistant⁽¹⁾</u>
Thomas&Betts	709 --
	<u>Connector Modules (5-Pair)</u>
	<u>Straight Splice</u> <u>Bridge Splice</u> <u>Half-Tap Splice</u>
3M Company ⁽⁵⁾ (22-26 Awg)	710-SC1-5 710-BC1-5 710-TC1-5
	<u>Connector Modules (10-Pair)</u>
	<u>Straight Splice</u> <u>Bridge Splice</u> <u>Half-Tap Splice</u>
	<u>Connector Modules (25-Pair)</u>
	<u>Straight Splice</u> <u>Bridge Splice</u> <u>Half-Tap Splice</u>
3M Company (22-26 Awg) (19-24 Awg)	710-SC1-25 710-BC1-25 710-TC1-25 710-SCL-25 710-BC1-25 710-TCL-25 4000-D/TR 4005-DPM/TR 4008-D/TR 4000-DT/TR 4077-A ⁽³⁾ 4075-S ⁽³⁾ 4075-S ⁽³⁾ 4077-B ⁽³⁾ 4077-C ⁽³⁾ 4077-C ⁽³⁾ 4077-D ⁽³⁾

See page 3.1.3 for notes.

3.1.3
6-03
cm

cm - Connectors

<u>Manufacturer</u>	<u>Catalog Number</u>		
<u>Splicing Connectors for Optical Fibers</u>			
	<u>Passive</u>	<u>Tunable</u>	<u>Mass</u>
3M Company	2529 Fibrlok II	-	-

- Notes:**
- (1) Nonmoisture resistant connectors are to be used only on plastic-insulated nonfilled cables utilizing airtight splice enclosures and when moisture protection is provided by pressurization.
 - (2) Connectors in strip form may be used. Always use tool recommended by the manufacturer.
 - (3) All listed 3M modules shall use the appropriate grease boxes (4075-S, 4077-A, 4077-B, 4077-C, or 4077-D) in all applications except pressurized cables.
 - (4) For clearing and capping only.
 - (5) Not to be used on 19-gauge waterproof cable with solid polypropylene or high density polyethylene insulated conductors.

tm - Cable Markers

<u>Manufacturer</u>	<u>Catalog Number</u>
<u>Color-Coded Tags</u>	
Brady	B-871 ⁽²⁾
Hickory Printing Group, Inc.	PC-2 ⁽³⁾
Tech Products	EL2(series)
U.G. Products	100 ⁽¹⁾

Sleeves

Multilink	MFM-12
	MFM-15
	MFM-20

Write-On

Brady	PWC-PK
LEM	PPCL-BW
Panduit Corp.	PSCB
Thomas & Betts Corp.	WM-BW3
	WM-BW5

Notes: (1)The catalog number is suffixed with the letter R, B, or W to indicate Red, Blue or White bands.

(2)The catalog number is suffixed with the letter B, G or Y to indicate Blue, Green or Yellow color coded tags.

(3)The catalog number is suffixed with the letter B, G, W or Y to indicate Blue, Green, White or Yellow color coded tags.

3.3
1-03
gs

gs - Bonding Connector Harnesses

Manufacturer

Catalog Number

gs-a - #6 AWG Stranded Harness Wires

Bonding in Aerial, Buried or Underground Splice Cases,
and Ready-Access Enclosures

	<u>Noninsulated</u>			<u>Insulated</u>		
	<u>10" Length</u>	<u>20" Length</u>	<u>22" Length</u>	<u>10" Length</u>	<u>20" Length</u>	<u>22" Length</u>
Electric Motion Company	EM8100-10B.10	EM8100-20B.10	EM8100-22B.10	EM8100-10.10	EM8100-20.10	EM8100-22.10
LSW	LSW 6-10	LSW 6-20	LSW 6-22	LSW 6-10C	LSW 6-20C	LSW 6-22C

Bonding in Buried Plant Housings

	<u>Noninsulated</u>			<u>Insulated</u>		
	<u>6" Length</u>	<u>11" Length</u>	<u>18" Length</u>	<u>6" Length</u>	<u>11" Length</u>	<u>18" Length</u>
Electric Motion Company	EM8100-6B.10	EM8100.11B.10	EM8100-18B.10	EM8100-6.10	EM8100.11.10	EM8100-18.10
LSW	LSW 6-06	LSW 6-11	LSW 6-18	LSW 6-06C	LSW 6-11C	LSW 6-18C

gs-b - #6 AWG Braid

Bonding in Aerial, Buried, or Underground Splice Cases,
Ready-Access Enclosures, and Buried Plant Housings

	<u>Noninsulated</u>	<u>Insulated</u>
A.K. Stamping	A1163	-
Electric Motion Company	EM-2050	EM-2051
Excelco	579203-25	-
3M	25T ⁽⁴⁾	25/4467 ⁽⁴⁾

See page 3.3.1 for notes.

gs - Bonding Connector Harnesses
(Stranded Type Wire)

Buried Service Wire (Bare Metal Shields Only)

<u>Manufacturer</u>	<u>Catalog Number</u>
<u>gs-a - #14 AWG Insulated Harness Wires</u>	
<u>Bonding at Station Protector (Network Interface Device)</u>	
	<u>7" Length</u>
Corning Cable Systems	GH-13(1)
Electric Motion Company	EM1407TFFR(1)
Engineered Products Co.	EH-13(1)
LSW	LSW-5(1)
Preformed Line Products	8000739(2)

gs-b - #6 AWG Insulated Harness Wires

Bonding in Buried Plant Housings

	<u>15" Length</u>	<u>36" Length</u>
Electric Motion Company	EM3955-6L/8100-15(3)	EM3955-6L/8100-36(3)

- Notes:**
- (1)Harnesses equipped with AMP's #329860 Termi-Foil^R connector at one end for attachment to the bare metal shield of the service wire.
 - (2)Harnesses equipped with Preformed Line Products' 8000733 connector at one end for attachment to the bare metal shield of the service wire.
 - (3)Harnesses equipped with Electric Motion's EM3955 connector at one end for attachment to the bare metal shield of the service wire.
 - (4)When ordering, state 3-inch eyelets.

3.3.2
1-03
gt

gt - #6 AWG Shield Connector Isolation Harnesses⁽¹⁾⁽²⁾
(Strand Type Wire)

Buried Service Wire (Bare Metal Shields Only)

<u>Manufacturer</u>	<u>Catalog Number</u>
<u>Buried Plant Housings Only</u>	
	<u>15" Length</u>
Electric Motion Co.	EM 3955-6S/8100-15 BARP ⁽³⁾
	<u>36" Length</u>
	EM 3955-6S/8100-36 BARP ⁽³⁾

Notes:

- ⁽¹⁾Restricted for use only where location of buried service wire shields is required at dairy or hog farm facilities to help alleviate stray voltage effects.
- ⁽²⁾When these harness wires are used, a warning tag shall be placed on the buried service wire to alert the technician that a voltage difference may be present and that temporary bond strap shall be applied between the service wire shield and connector plate of the buried plant housing before performing any work in the buried plant housing. The temporary bond shall be removed after work is completed in the buried plant housing.
- ⁽³⁾Harnesses are equipped with Electric Motion's EM 3955-BARP shield isolation connector at one end for attachment to the bare metal shield of the service wire.

3.4
1-03
sv

sv - Filled Plastic Sleeves

Manufacturer

Jameson (W. G. Pearson)

Catalog Number

Order by size and description

Note: Splicing connectors and plastic sleeves are to be used only on conductor sizes and types and splicing arrangements as recommended by the connector and sleeve manufacturers.

sm - Buried Plant Warning Signs, Stakes and Decal Markings

<u>Manufacturer</u>	<u>Catalog Number</u>		
	<u>sm-a Decal Type Warning Signs and Markings⁽¹⁾⁽²⁾</u>		
	<u>Non-Reflective</u>		
	<u>Warning Signs</u>	<u>Numerals & Letters</u>	<u>Symbols</u>
3M Company	X	X	-
ACP International	X	X	-
Michael J. Arnold & Co. ⁽¹¹⁾	X	X	X
W. H. Brady	X	X	-
Color Arts, Inc.	X	X	-
Marconi Communications	X	X	-
May Advertising Corp.	X	X	-
Tech Products	X	X	X
Vernon Company	X	-	-
Vulcan Signs	X	X	-
<u>sm-b Decal Type Warning Signs and Markings⁽¹⁾⁽²⁾</u>			
	<u>Reflective</u>		
	<u>Warning Signs</u>	<u>Numerals & Letters</u>	<u>Symbols</u>
3M Company	-	No. 5000 ⁽⁵⁾ No. 5005 ⁽⁶⁾ No. 5025 ⁽⁶⁾	No. 5002
ACP International	CBC36RY CBC36RO	CBC36RY CBC36RO	-
Michael J. Arnold & Co. ⁽¹¹⁾	MJADWR	MJAD ^{(12)R}	MJADSR
W. H. Brady	-	5905 Series	-
William Frick & Co.	CAUT-BC/IND	REF1.5 ⁽⁵⁾⁽¹⁶⁾ OREF1.5 ⁽⁶⁾⁽¹⁶⁾ REF3T ⁽⁵⁾ OREF3T ⁽⁶⁾	
Vulcan Signs	UCM Series	UEC Series	-

See page 3.5.3 for notes.

sm - Buried Plant Warning Signs, Stakes and Decal Markings

<u>Manufacturer</u>	<u>Catalog Number</u>		
	<u>sm-c Signs and Stakes</u>		
	<u>Cable Splice</u>	<u>Cable Route</u>	<u>Warning</u>
ACP International ⁽³⁾	-	-	ACP-BM-53
Michael J. Arnold & Co. ⁽³⁾⁽⁴⁾	MJABCSA	MJA930615 ⁽¹³⁾	MJACBC MJA ⁽¹⁴⁾
W. H. Brady	B-11 ⁽³⁾ - -	B-13 ⁽³⁾ - -	B-12 ⁽³⁾ BL1 BL2
Carsonite	-	-	Impactor
Decal Industries ⁽⁴⁾	-	-	FP ⁽⁷⁾ - ⁽⁸⁾ D ⁽⁹⁾
William Frick & Co. ⁽³⁾⁽⁴⁾	BC-SPLICE	CABLE-RT	BC-CAUTION
GreenLine ⁽⁴⁾	-	-	FLU1RD96016
Lyle Signs Inc. ⁽³⁾⁽⁴⁾	UT-55	UT-54	UT-53
Maloney Technical Products ⁽⁶⁾	-	-	MRKR™
Marconi Communications ⁽³⁾	1SP41233	1SP41232	1SP4121
May Advertising Corp. ⁽³⁾⁽⁴⁾	BM55-MABC 412	BM54-MACR 412	BM53-MABC 412
J. Miller Industries, Inc. ⁽⁶⁾	-	-	JMI-375-096-OR-100
Quantum	-	-	QM-375
Repnet	REA/PSA-1	REA/PSA-2	REA/PSA-3
Rustproof Signs, Inc. ⁽³⁾	R-709 -	R-710 -	R-708 R-666
SArgent-Sowell ⁽³⁾	49PHV067	49PHV069	49PHV068
Vulcan Signs ⁽³⁾⁽⁴⁾	UCM-102	UCM-101	UCM-505

See page 3.5.3 for notes.

3.5.2
1-03
sm

sm - Buried Plant Warning Signs, Stakes and Decal Markings

<u>Manufacturer</u>	<u>Catalog Number</u>
<u>sm-c Signs and Stakes</u>	
	<u>Mounting Stakes</u>
Michael J. Arnold & Co.	UPC-8_ (15)
W. H. Brady	96920
Carsonite	CUM-375
Decal Industries	FP_ (7) _ (9)
William Frick & Co.	POST-8FT (17)
FlexStake	302 303 304 305
GreenLine	FLU1-96
Marconi Communications	UP4120 (10)
J. Miller Industries, Inc.	JMI-375-096-OR
Rustproof Signs, Inc.	RP-208N
Vulcan Signs	82GR

See page 3.5.3 for notes.

- Notes:**
- (1) All decals should be applied using manufacturers recommended materials and practices.
 - (2) Order by size and description.
 - (3) Stake not included.
 - (4) Signs may be ordered with black lettering on orange background.
 - (5) Available only in black lettering on yellow background.
 - (6) Available only in black lettering on orange background.
 - (7) Blank denotes color of marker. Replace blank with W for White, O for Orange, or G for Green.
 - (8) Blank denotes number and color of decals. Replace blank with 1Y for 1 yellow decal, 2Y for 2 yellow decals, 1O for 1 orange decal, or 2O for 2 orange decals.
 - (9) Blank denotes length of marker in inches. Replace blank with 60, 66, 72, or 78.
 - (10) Blank denotes length of stake in inches. Replace blank with either 72 or 96.
 - (11) Decals may be ordered with black lettering on orange background.
 - (12) Replace blank with "N" for numerals and "L" for letters.
 - (13) Add letter "A" to catalog number to obtain sign with arrows. The six-digit number is the manufactured date and identifies the purchaser.
 - (14) Replace blank with "TF" for tri-fold and "QF" for quad-fold.
 - (15) Replace blank with "G" for green painted and "GAL" for galvanized.
 - (16) When ordering specify either 1 decal or 4 decals per sheet.
 - (17) When ordering specify either 2 pound or 1.12 pound post.

	<u>Item Designation</u>	<u>Page</u>
Arresters, gas tube.....	nh	5.4
" secondary power	gi	5.5
Blocks, terminal, for use in pedestals	sh	5.6
Network interface devices.....	nid	5.7
Protectors, mainframe.....	nm	5.2
" power service	gg	5.3
" station.....	ni	5.1

ni - Station Protectors⁽²⁾

Fuseless, Well Mount, Carbon

<u>Manufacturer</u>	<u>1-Pair</u>	<u>2-Pair</u>	<u>4-Pair</u>	<u>6-Pair</u>
Marconi Communications	351S/1304S	393-2S/1304S	393-4S/1304S	393-6S/1304S ⁽¹⁾
		<u>25-Pair</u>		<u>50-Pair</u>
Marconi Communications	2BT25PMH/1304S 25P4X4MH/1304S ⁽¹⁾			2BT50PMH/1304S 50P4X4MH/1304S ⁽¹⁾

Notes:

(1) Restricted to inside mounting.

(2) Designations after the slash "/" mark indicates the arrester unit which RUS has accepted for use in the listed protector. Unless otherwise noted, no other arrester unit is RUS accepted for use in protectors listed here.

5.1.1
1-03
ni

ni - Station Protectors⁽¹⁾⁽²⁾

Fuseless, Module, Carbon

<u>Manufacturer</u>	<u>25-Pair</u>	<u>50-Pair</u>	<u>100-Pair</u>
3M ⁽³⁾	4188-25 ⁽⁴⁾ /3AB 4____ ⁽⁵⁾ 88____ ⁽⁶⁾ -25/3AB 4990____ ⁽⁷⁾ -25/3AB	4188-50 ⁽⁴⁾ /3AB 4____ ⁽⁵⁾ 88____ ⁽⁶⁾ -50/3AB 4990____ ⁽⁷⁾ -50/3AB	4188-100 ⁽⁴⁾ /3AB 4____ ⁽⁵⁾ 88____ ⁽⁶⁾ -100/3AB 4990____ ⁽⁷⁾ -100/3AB
Marconi Communications	--	R134C/3AB	R134C/3AB

Fused, Well Mount, Carbon

1-Pair

Marconi Communications	375S/1304S
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Notes: (1)Restricted to inside mounting.

(2)Designations after the slash "/" mark indicates the arrester unit which RUS has accepted for use in the listed protector. Unless otherwise noted, no other arrester unit is RUS accepted for use in protectors listed here.

(3)The arrester module accepted for these protectors is the 3AB carbon arrester module manufactured by Marconi Communications.

(4)Must be supplied with 4188C-25, 50, or 100 protector covers, as appropriate to station protector size provided.

(5)Blank space replaced with 2, 4, 5, 6 or 7.

(6)Blank space replaced with F or R.

(7)Blank space or blank space replaced with 2, 3, 4, 5 or 6.

(8)Blank space replaced with DF or DR.

ni - Station Protectors⁽⁷⁾

Fuseless, Well Mount, Gas Tube

<u>Manufacturer</u>	<u>1-Pair</u>	<u>2-Pair</u>	<u>4-Pair</u>	<u>6-Pair</u>
Corning Cable Systems	500-LCGX/LCGX ⁽¹⁾⁽⁴⁾	502A1-2LCGX/LCGX ⁽¹⁾⁽⁴⁾	502A1-4LCGX/LCGX ⁽¹⁾⁽⁴⁾	502A1-6LCGX/LCGX ⁽¹⁾⁽⁴⁾⁽⁶⁾
Marconi Communications	351SVSR2/1304VSR2 ⁽¹⁾⁽⁴⁾	393-2SVSR2/1304VSR2 ⁽¹⁾⁽⁴⁾	393-4SVSR2/1304VSR2 ⁽¹⁾⁽⁴⁾	393-6SVSR2/1304VSR2 ⁽¹⁾⁽⁴⁾⁽⁶⁾

25-Pair

50-Pair

Marconi Communications	2BT25VSRMH/1304VSR2 ⁽¹⁾⁽⁴⁾ 25VSR4X4MH/1304VSR2 ⁽¹⁾⁽⁴⁾⁽⁶⁾	2BT50VSRMH/1304VSR2 ⁽¹⁾⁽⁴⁾ 50VSR4X4MH/1304VSR2 ⁽¹⁾⁽⁴⁾⁽⁶⁾
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Notes: (1)2-electrode.

(2)3-electrode.

(3)Medium duty.

(4)Heavy duty.

(5)Maximum duty.

(6)Restricted to inside mounting.

(7)Designations after the slash "/" mark indicates the arrester unit which RUS has accepted for use in the listed protector. Unless otherwise noted, no other arrester unit is RUS accepted for use in protectors listed here.

ni - Station Protectors⁽⁷⁾Fuseless, Module, Gas Tube

<u>Manufacturer</u>	<u>1-Pair</u>	<u>2-Pair</u>	<u>4-Pair</u>	<u>6-Pair</u>
Joslyn	7040-01-EWR/125 EW-R ⁽¹⁾⁽⁴⁾ 7040-01/356M ⁽²⁾⁽⁴⁾	7040-02-EWR/125 EW-R ⁽¹⁾⁽⁴⁾ 7040-02/356M ⁽²⁾⁽⁴⁾	--	--
Surge Technologies ⁽⁴⁾	--	--	--	ST265 66-6
TII	3251M/355M ⁽²⁾⁽⁵⁾ 3261M/356M1 ⁽²⁾⁽⁴⁾	3252M/355M ⁽²⁾⁽⁵⁾ 3262M/356M1 ⁽²⁾⁽⁴⁾	5304M/356M1 ⁽²⁾⁽⁴⁾ 5314M/355M ⁽²⁾⁽⁵⁾	5306M/356M1 ⁽²⁾⁽⁴⁾ 5316M/355M ⁽²⁾⁽⁵⁾
	<u>12-Pair</u>	<u>25-Pair⁽⁶⁾</u>	<u>50-Pair⁽⁶⁾</u>	<u>100-Pair⁽⁶⁾</u>
AT&T Network Systems	--	189-25/3B1ER ⁽¹⁾⁽⁴⁾	189-50/3B1ER ⁽¹⁾⁽⁴⁾	189-100/3B1ER ⁽¹⁾⁽⁴⁾
Corning Cable Systems	--	C-552/7X ⁽¹⁾⁽⁴⁾	C-550/7X ⁽¹⁾⁽⁴⁾	C-551/7X ⁽¹⁾⁽⁴⁾
3M(10)	-- -- -- -- -- -- --	4188-25(11)/6U2VS ⁽¹⁾⁽⁴⁾ 4188-25(11)/3GUVS ⁽²⁾⁽³⁾ 4__(8)88__(9)-25/6U2VS ⁽¹⁾⁽⁴⁾ 4__(8)88__(9)-25/3GUVS ⁽²⁾⁽³⁾ 4__(12)88__(13)-25/6U2VS ⁽¹⁾⁽⁴⁾ 4__(12)88__(13)-25/3GUVS ⁽²⁾⁽³⁾	4188-50(11)/6U2VS ⁽¹⁾⁽⁴⁾ 4188-50(11)/3GUVS ⁽²⁾⁽³⁾ 4__(8)88__(9)-50/6U2VS ⁽¹⁾⁽⁴⁾ 4__(8)88__(9)-50/3GUVS ⁽²⁾⁽³⁾ 4__(12)88__(13)-50/6U2VS ⁽¹⁾⁽⁴⁾ 4__(12)88__(13)-50/3GUVS ⁽²⁾⁽³⁾	4188-100(11)/6U2VS ⁽¹⁾⁽⁴⁾ 4188-100(11)/3GUVS ⁽²⁾⁽³⁾ 4__(8)88__(9)-100/6U2VS ⁽¹⁾⁽⁴⁾ 4__(8)88__(9)-100/3GUVS ⁽²⁾⁽³⁾ 4__(12)88__(13)-100/6U2VS ⁽¹⁾⁽⁴⁾ 4__(12)88__(13)-100/3GUVS ⁽²⁾⁽³⁾
Marconi Communications	-- -- -- -- --	-- BEP_(15)25_(16)/_(20) BEPB25_(18)/_(20) BEP_(19)25SC_(17)/_(20)	R134C/6U2VS ⁽¹⁾⁽⁴⁾ R134C/3GUVS ⁽²⁾⁽³⁾ BEP_(15)50_(16)/_(20) BEPB50_(18)/_(20) BEP_(19)50SC_(17)/_(20)	R134C/6U2VS ⁽¹⁾⁽⁴⁾ R134C/3GUVS ⁽²⁾⁽³⁾ BEP_(15)100_(16)/_(20) BEPB100_(18)/_(20) BEP_(19)100SC_(17)/_(20)
Surge Technologies ⁽⁴⁾	ST260 66-12 -- -- -- --	ST260 66-25 ST260 110-25	ST188 ENA1-50 ST188 110-50 ST189 B1-50 ST190 A1-50 ST250 66-50	ST188 B1-100 ST188 ENA1-100 ST188 110-100 ST189 B1-100 ST190 A1-100 ST250 66-100
TII	-- --	515 25/355M ⁽²⁾⁽⁵⁾ 516 25/356M1 ⁽²⁾⁽⁴⁾	--	--

See page 5.1.4 for notes.

ni - Station Protectors⁽⁷⁾

Fused, Well Mount, Gas Tube

Manufacturer 1-Pair

Marconi Communications 375SVSR2/1304VSR2⁽¹⁾⁽⁴⁾

Notes: (1)2-electrode.

(2)3-electrode.

(3)Medium duty.

(4)Heavy duty.

(5)Maximum duty.

(6)Restricted to inside mounting.

(7)Designations after the slash "/" mark indicates the arrester unit which RUS has accepted for use in the listed protector. Unless otherwise noted, no other arrester unit is RUS accepted for use in protectors listed here.

(8)Blank space replaced with 2, 4, 5 or 6.

(9)Blank space replaced with F or R.

(10)The arrester modules accepted for these 3M protectors are manufactured by Marconi Communications.

(11)Must be supplied with 4188C-25, 50, or 100 protector covers, as appropriate to station protector size provided.

(12)Blank space replaced with 8 or 9. Accepted for outdoor mounting.

(13)Blank space or blank space replaced with B.

(14)Blank space replaced with DF or DR.

(15)Replace the blank space with C, G, or CG.

(16)Replace the blank space with C, MM, CF, or FS.

(17)Replace the blank space with 6', 12', or 25'.

(18)Replace the blank space with MM, CF, or FS.

(19)Replace the blank space with C or CG.

(20)Replace the blank space with 3GUVS⁽²⁾⁽³⁾ or 6U2VS⁽¹⁾⁽⁴⁾.

5.2
1-03
nm

nm - Mainframe Protectors⁽¹⁾⁽⁷⁾

Manufacturer

<u>Carbon</u>			
	<u>10-Pair</u>	<u>50-Pair</u>	<u>100-Pair</u>
Marconi Communications	713/3AB	--	R399/3AB
Porta Systems	--	--	508PF/35BCN
<u>Gas Tube</u>			
	<u>10-Pair</u>	<u>50-Pair</u>	<u>100-Pair</u>
AT&T Network Systems	--	--	310/3B1ER ⁽²⁾⁽⁵⁾
Corning Cable Systems	--	--	C-388/7A ⁽²⁾⁽⁵⁾
Marconi Communications	R713/6A20 ⁽²⁾⁽⁵⁾ R713/3G ⁽³⁾⁽⁴⁾	--	R399/6A20 ⁽²⁾⁽⁵⁾ R399/3G ⁽³⁾⁽⁴⁾
Porta Systems	--	--	508PF/65BCN ⁽²⁾⁽⁵⁾
<u>Solid-State⁽⁸⁾</u>			
	<u>100-Pair</u>		
Circa Telecom	2500QC2-100/CT3B1FS 2500QC2-100/CT3B1S		
Corning Cable Systems	(9)/11A		
Marconi Communications	R399/S3AB		

Notes: (1)Not to be used at subscribers' premises.

(2)2-electrode.

(3)3-electrode.

(4)Medium duty.

(5)Heavy duty.

(6)Maximum duty.

(7)Designations after the slash "/" mark indicates the arrester unit which RUS has accepted for use in the listed protector. Unless otherwise noted, no other arrester unit is RUS accepted for use in protectors listed here.

(8)PEG-7, Class I Category.

(9)For use with Corning's C-388 mainframe protector.

gg - Power Service Protectors

<u>Manufacturer</u>		<u>Catalog Number</u>
	Maximum Service Voltage:	125/250
Atlantic Scientific	ZoneGuardian Plus	#42003
	" "	#43005
	" "	#43006
	ZoneGuardian Series	#35029
	" "	#35030
	" "	#35031
Corning Cable Systems		CP 211
EFI Corporation		DPI 153 DPI 453 Turbo ST EFI 153 EFI 453 Turbo ST
TII		410BM 411BM 412BM 422BM
Transtector		ACP100BL CPS 150
Tripp Lite		ISOBLOK 2-0 ISOBAR 2-6 " 4-6 " 8-15

5.4
6-03
nh

nh - Gas Tube Arresters⁽¹⁾

<u>Manufacturer</u>	<u>MDF Module</u>	<u>Station Module</u>	<u>Well Mount</u>
Corning Cable Systems	7A ⁽²⁾⁽⁵⁾	7X ⁽²⁾⁽⁵⁾	-
Joslyn	-	2022-60-A ⁽²⁾⁽⁵⁾	-
Marconi Communications	6A20 ⁽²⁾⁽⁵⁾ 3G ⁽³⁾⁽⁴⁾	6U2VS ⁽²⁾⁽⁵⁾ 3GUVS ⁽³⁾⁽⁴⁾ G1200-0-350 ⁽²⁾⁽⁵⁾	1304VSR2 ⁽²⁾⁽⁵⁾
Porta Systems	-	65BCN ⁽²⁾⁽⁵⁾	-
Surge Technologies	ST3B1E	ST356-350V	--
TII	-	355M ⁽³⁾⁽⁶⁾ 356M1 ⁽³⁾⁽⁵⁾	-

nh - Solid-State Arresters⁽⁷⁾

<u>Manufacturer</u>	<u>MDF Module</u>
Circa Telecom	CT3B1FS ⁽⁸⁾⁽¹⁰⁾ CT3B1S ⁽⁸⁾⁽¹⁰⁾
Corning Cable Systems	11A ⁽⁸⁾⁽⁹⁾
Surge Technologies	ST3B1E-BAL

Notes:

(1) Arresters listed under this category are not complete station protectors. They are intended for use as components, as accepted and listed, in the station protector "ni" and "nm" sections of the List of Materials. Arrester units here shall not be used in a station protector listed in the "ni" or "nm" section unless the same arrester unit is listed for use in the particular protector on the "ni" or "nm" pages.

(2) 2-electrode.

(3) 3-electrode.

(4) Medium duty.

(5) Heavy duty.

(6) Maximum duty.

(7) Designations after the slash "/" mark indicates the arrester unit which RUS has accepted for use in the listed protector. Unless otherwise noted, no other arrester unit is RUS accepted for use in protectors listed here.

(8) PEG-7, Class I Category.

(9) For use with Corning's C-388.

(10) For use with Circa Telecom's 2500QC2-100.

gi - Secondary Power Arresters

<u>Manufacturer</u>	<u>Catalog Number</u>	
	<u>Main Service Voltage:</u>	<u>125/250</u>
	<u>Signal and Power</u>	<u>Power Only</u>
ACT Communications ⁽⁵⁾	-	452-120-XOX 452-240-XOX 453-120-XOX 453-240-XOX 453-277-XOX 453-480-XOX 454-120-XOX 454-240-XOX 455-120-XOX 455-240-XOX 455-277-XOX 455-480-XOX 472-120-XOX 472-240-XOX 473-120-XOX 473-277-XOX
Advanced Protection Technologies	-	TE/100 TE/1000 TE/200 TE/2000 TE/300 TE/3000 TE/600 TE/6000
Approved Lightning Protection Co.	-	SA-20
Atlantic Scientific	ZoneSentinel Series " " " " " " ZoneMaster 75 Series " " " " " " ZoneMaster 140 Series " " " " " " " "	#12100 #12101 #12102 #12103 #11200 #11201 #11202 #11203 #17100 #17101 #17102 #17103
EFI Corporation	-	MBP120EFI-Y_ ⁽⁴⁾
General Electric	-	9L15DCB002

See page 5.5.2 for notes.

5.5.1
1-03
gi

gi - Secondary Power Arresters

<u>Manufacturer</u>	<u>Catalog Number</u>	
<u>Main Service Voltage: 125/250 (Cont'd)</u>		
	<u>Signal and Power</u>	<u>Power Only</u>
Joslyn	-	1250- ⁽⁸⁾ 1260- ⁽⁹⁾ 1261- ⁽⁹⁾ 1265- ⁽¹⁰⁾ 1266- ⁽¹¹⁾ 1450-85 1452- ⁽¹²⁾ 1455- ⁽¹³⁾
Northern Technologies, Inc.	-	TCS- ⁽¹⁾ - ⁽²⁾ TCS- ⁽¹⁾ - ⁽²⁾ - ⁽⁶⁾ SII- ⁽⁷⁾ - ⁽²⁾ - ⁽⁶⁾
<u>Other Service Voltages</u>		
	<u>Signal and Power</u>	<u>Power Only</u>
AC Data Systems	-	Surge Blox
Advanced Protection Technologies	-	TE/400 TE/4000 TE/500 TE/5000
Atlantic Scientific	ZoneSentinel Series " " " " ZoneMaster 75 Series " " " " ZoneMaster 140 Series " " " "	#12104 #12105 #12106 #11204 #11205 #11206 #17104 #17105 #17106
Joslyn	-	1250-32-E 1263-21 1451-85 1456- ⁽¹⁴⁾
Northern Technologies, Inc.	-	TCS- ⁽¹⁾ - ⁽³⁾ TCS- ⁽¹⁾ - ⁽²⁾ - ⁽⁶⁾ SII- ⁽⁷⁾ - ⁽²⁾ - ⁽⁶⁾
Tesco	-	TES 1120Y
Transtector	-	ACP3000 CPS Series APEX Series MCP Series SLIM LINE 120V SLIM LINE 240V

See page 5.5.2 for notes.

- Notes:**
- (1)Four blank spaces replaced with 100, 250, 350, 500, 1000, or LAP.
 - (2)Blank space replaced with B, C, or E.
 - (3)Blank space replaced with F, G, or H.
 - (4)Blank space replaced with 1, 2, or 3.
 - (5)(X) denotes manufacturer's catalog number for optional lamps, alarming, and enclosures.
 - (6)May have optional suffix: XT, L, or XTL.
 - (7)Blank space replaced with 2, 3, or 5.
 - (8)Blank space replaced with 32, 33, or 33-E
 - (9)Blank space replaced with 21, 41, 45, or 85.
 - (10)Blank space replaced with 21, 41, 45, 85, 85-PM, or 85-PMT.
 - (11)Blank space replaced with 45 or 85.
 - (12)Blank space replaced with 21, 41, 80, 85, or 85-PM.
 - (13)Blank space replaced with 21, 41, 45, 80, 85, or 85-PM.
 - (14)Blank space replaced with 41, 45, 80, 85, or 85-PM.

<u>Manufacturer</u>	<u>sh - Terminal Blocks for Use in Pedestals</u>								
	<u>Catalog Number</u>								
<u>sh-a Unprotected Filled IDC Terminal Blocks</u>									
	<u>1-Pair (w/leads)</u>	<u>2-Pair (w/leads)</u>	<u>5-Pair (w/leads)</u>	<u>6-Pair (w/leads)</u>	<u>10-Pair (w/leads)</u>	<u>12-Pair (w/leads)</u>	<u>15-Pair (w/leads)</u>	<u>25-Pair (w/leads)</u>	<u>50-Pair (w/leads)</u>
3M Company ⁽¹⁰⁾	--	--	1D5XXXXXXXXX	--	ID10XXXXXXXX	--	ID15XXXXXXXX	ID25XXXXXXXX	--
Channell	--	--	--	MRB06M02T01S43	MRT 10 M03T01	--	--	MRT25M02T01S43	--
Marconi Communications	--	--	RPI5A ⁽⁵⁾ RGIS2SLS ⁽⁴⁾	RPI5A ⁽⁵⁾⁽⁸⁾ RGIS5A ⁽⁶⁾	RPI5A ⁽⁵⁾⁽⁸⁾ RGIS6A ⁽⁶⁾	RPI5A ⁽⁵⁾⁽⁸⁾ RGIS10A ⁽⁶⁾⁽⁸⁾	RPI5A ⁽⁵⁾⁽⁸⁾ RGIS12A ⁽⁶⁾⁽⁸⁾	RPI5A ⁽⁵⁾⁽⁸⁾ RGIS25A ⁽⁶⁾⁽⁸⁾	RPI5A ⁽⁵⁾⁽⁸⁾ RGIS25A ⁽⁷⁾⁽⁸⁾
Thomas&Betts	--	--	54866 ^(1,5,8,9) 2520 ^(1,5,8) 5460002 ⁽²⁾	54867 ^(1,5,8,9) 2521 ^(1,5,8) 5460102 ⁽²⁾	54868 ^(1,5,8,9) 2522 ^(1,5,8) 5460202 ⁽²⁾	54869 ^(1,5,8,9) 2523 ^(1,5,8) 5460302 ⁽²⁾	54070 ^(1,5,8,9) 2524 ^(1,5,8) 5460502 ⁽²⁾	54071 ^(1,5,8,9) 2525 ^(1,5,8)	2526 ^(1,5,8)
Tyco Electronics (DTerminator 2)	--	--	PTB-5-AU-4	--	PTB-10-AU-4	PTB-12-AU-4	--	PTB-25-AU-4	--
	--	--	--	--	PTB-10-FS ⁽³⁾	PTB-12-FS ⁽³⁾	--	PTB-25-FS ⁽³⁾	--

sh-b Unprotected Filled Binding Post Terminal Blocks

<u>1-Pair (w/leads)</u>	<u>2-Pair (w/leads)</u>	<u>5-Pair (w/leads)</u>	<u>6-Pair (w/leads)</u>	<u>10-Pair (w/leads)</u>	<u>12-Pair (w/leads)</u>	<u>15-Pair (w/leads)</u>	<u>25-Pair (w/leads)</u>	<u>50-Pair (w/leads)</u>
Marconi Communications	--	--	RPT5A4G ⁽¹⁾	--	RPT10A4G ⁽¹⁾	--	--	RPT25A4G ⁽¹⁾
	--	--	RGT5A4G ⁽²⁾	--	RGT10A4G ⁽²⁾	--	--	RGT25A4G ⁽²⁾

Notes: (1)E/W bottom exit pigtail stub.

(2)E/W rear exit pigtail stub.

(3)Stub cables accepted in 12 feet and 25 feet lengths using RUS accepted PE-39 or PE-89 cables. Order stub cable in accordance with manufacturer's instructions.

(4)Can only be ordered stubless from the manufacturer.

(5)E/W bottom exit pigtail stub available in 4, 12, or 25 foot lengths. Order pigtail stub in accordance with manufacturer's instructions.

(6)E/W rear exit pigtail stub available in 4, 12, or 25 foot lengths. Order pigtail stub in accordance with manufacturer's instructions.

(7)E/W top exit pigtail stub available in 4, 12, or 25 foot lengths. Order pigtail stub in accordance with manufacturer's instructions.

(8)Can be ordered with a filled cable stub using RUS accepted PE-39 or PE-89 cables in 4, 12, or 25 foot lengths. Order stub cable in accordance with manufacturer's instructions.

(9)Flat plane block for left and right side drop wire entrance.

(10) Contact vendor for pedestal and aerial stub options.

5.7
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nid

nid - Network Interface Devices

Manufacturer

Alcoa (c/o Petro Comm)	SNI 4600
Corning Cable Systems	NI - 2000 Series
Tyco Electronics	RAYNID 760 and 2900 Series

	<u>Item Designation</u>		<u>Page</u>
Access equipment.....	ae.....		6.1
Switching equipment, digital, stored program.....	pc.....		6.3
Transport equipment.....	te.....		6.2
Wireless networks	wn		6.4

ae - Access Equipment

<u>Manufacturer</u>	<u>Product</u>	<u>Copper</u>	<u>Fiber</u>	<u>Wireless</u>
Actelis Networks	MetalIGHT 1500 MetalIGHT 100E	Y Y	N N	N N
ADC	PG-FlexPlus ⁽¹¹⁾	Y	N	N
ADTRAN	Access Equipment ⁽⁷⁾	Y	Y	Y
AFC	UMC 1000A DMAX 1120	Y Y	Y Y	Y Y
Alcatel	Litespan-2000	Y	Y	N
Calix	Calix C7	Y	Y	N
Catena Networks	CN1000	Y	Y	N
Charles Industries	Dualine Plus ⁽⁴⁾ HVDL 3.1	Y Y	N N	N N
Conklin	C8000+4 MSSL FASTmux ADSL Mini-DSLAM Model 2000	Y Y	N N	N N
Fujitsu	FLASHWAVE 4100	N	Y	N
General Bandwidth	G6 Access & Media Gateway	Y	Y	N
GoDigital	XCel-4a XCel-8 XCel-12	Y Y Y	N N N	N N N
Lucent Technologies (AG Communications)	AnyMedia SLC Series 5 ⁽³⁾ SLC-2000 Access System SuperLine Access	Y Y Y Y	N N Y N	N N N Y
Marconi	DISC*S	Y	N	N
Net To Net Technologies	IP DSLAM 4000 ⁽⁸⁾ IP DSLAM 12000 ⁽⁸⁾ ADSL MiniDSLAM T1 Network Extender 1500	Y Y Y Y	N N N N	N N N N
Next Level Communications	Unified Access Platform	Y	Y	N
Occam	BLC-1100 BLC-1200 System	Y Y	Y Y	N N
Optical Solutions	FiberPath ⁽¹²⁾	N	Y	N

See page 6.1.1 for notes.

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ae

ae - Access Equipment

<u>Manufacturer</u>	<u>Product</u>	<u>Copper</u>	<u>Fiber</u>	<u>Wireless</u>
Paradyne	GranDSLam 4200 DSLAM ⁽⁵⁾	Y	N	N
Pulsecom	S-24DU ⁽⁴⁾ PSC Series 5 ⁽²⁾	Y Y	Y Y	Y N
Quantum Bridge Communications	QB3000 OAS QB5000 OAS QB100 IOT QB622 IOT	N N N N	Y Y Y Y	N N N N
Siemens Information and Communication Networks	Accession Integrated Access Platform	Y	Y	N
Sorrento Networks	JumpStart	N	Y	N
Telstrat International	Inteleflex	Y	Y	N
Wave7 Optics	Last Mile Link ⁽¹⁰⁾	N	Y	N
Zhone Technologies	AccessNode ⁽⁶⁾ MALC ⁽⁹⁾ ISC-303	Y Y Y	Y Y Y	N N N

Notes:

- ⁽¹⁾Includes the DDL125, DDL135, DDL201, DDL205, DDL210, DDL221, and DDL237 only.
- ⁽²⁾Includes the RT 596, RT5 192, RT 384, RT 576, and PSC Series 5 Fiber Kit.
- ⁽³⁾Includes the SLC-2000 Multi-Services Distant Terminal and DDM-2000 FiberReach Narrowband Shelf.
- ⁽⁴⁾Includes the S-24DU HUB.
- ⁽⁵⁾The GrandDSLam 4200 DSLAM includes the ReachDSL DSLAM and the ADSL DSLAM.
- ⁽⁶⁾Includes the AccessNode Express and UE9000.
- ⁽⁷⁾Includes the Total Access (TA) 750, TA 850, TA 1000, TA 1200 DSLAM, TA 1500, TA 3000, TA 3050, and TA 4303, MX2800, MX2810, MX2820, TA OPTI-3, TA OPTI-MX, and TRACER.
- ⁽⁸⁾Includes Multiplexer Uplink Module, ADSL Access Multiplexer Module, SDSL Inverse Multiplexer Module, and T1 Access Multiplexer 1500.
- ⁽⁹⁾Due to a lack of sufficient field experience, the ADSL+POTS+splitter card is not included in the MALC listing.
- ⁽¹⁰⁾The Last Mile Link (LML) includes Last Mile Core (LMC), Last Mile Tap (LMT), Last Mile Mux (LMM), and Last Mile Gateway (LMG).
- ⁽¹¹⁾The PG-FlexPlus includes the COT, RT, Field Shelf, Edge RAM and Edge IAD.
- ⁽¹²⁾This listing includes the FiberPath 400 and FiberPath 500.

te - Transport Equipment

<u>Manufacturer</u>	<u>Product</u>	<u>Interface Rate</u>	<u>RF Band</u>
ADC	QFLC DS3/OC1 FLC	6.312 Mb/s OC-1	
Advanced Fibre Communications	Telliant 5000 ⁽⁵⁾	OC-3	
Alcatel	1603 SMX	OC-3/12/48	
Charles Industries	T1		
Ciena	MultiWave CoreStream MetroDirector K2 ONLINE Metro Transport Platform ⁽⁷⁾	OC-12/48/192 OC-3/12/48/192 OC-3/12/48/192	
Cisco Systems	Cisco 15454	OC-3/12/48	
Fujitsu	FLASHWAVE® 4300	OC-3/12/48	
Lucent Technologies	DDM-2000 Metropolis DMX WaveStar TDM 2.5G/10G	OC-3/12 OC-3/12/48 OC-3/12/48/192	
Marconi	MAS MCN7000 ASX 200 BX ASX 1000 ASX 1200	OC-3/12 OC-3/12/48 OC-3/12 OC-3/12 OC-3/12/48	
Metro-Optix	CityStream 5000	OC-3/12/48	
Movaz Networks, Inc.	RAYexpress RAYextender	OC-3/12/48/192 OC-3/12/48/192	
Nortel Networks, Inc.	S/DMS Transport Node OC-3 Express ⁽¹⁾ OPTera 3500 OPTera Metro 5000 ⁽⁶⁾	OC-3/12 OC-3 OC-3/12/48/192 OC-3/12/48/192	
Redback	SmartEdge 800 Intelligent Terminal	OC-3/12/48	
Siemens Information and Communication Networks	XpressPass ⁽²⁾	OC-3/12/48	
Sorrento Networks	GigaMux	OC-3/12/48/192	

See page 6.2.1 for notes.

6.2.1
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te

te - Transport Equipment

<u>Manufacturer</u>	<u>Product</u>	<u>Interface Rate</u>	<u>RF Band</u>
Terayon	MainSail 8000 ⁽³⁾	OC-3/12	
Turin Networks	Traverse ⁽⁴⁾	OC-3/12/48/192	
Zhone Technologies	VISTA	OC-3/12	

Notes:

- (1)Includes the CX (Compact Express).
- (2)Includes the 140, 140HD, 142 and 144.
- (3)The MainSail 8000 can provide T1 circuits and xDSL lines.
- (4)Includes Traverse 600, 1600 and 2000.
- (5)The Telliant 5000 can provide xDSL lines.
- (6)This listing includes Models 5100 and 5200.
- (7)This listing includes Models 7000, 9000 and 11000.

pc - Stored Program Digital Switching Equipment

<u>Manufacturer</u>	<u>Base</u>	<u>Accepted System Release⁽⁵⁾</u>	<u>Acceptance Classification⁽¹⁾</u>	<u>RST(s)</u>
AG Communications Systems	GTD-5EAX	1732	A	RSU
American Digital Switching	Centura 2000	R1.00.03	A	CSS
Lucent Technologies	5ESS-2000 ⁽⁶⁾	5E16.2	A	EAIU BZ-RS/EAIU RSM ORM TRM
Nortel Networks, Inc.	DMS-10 ⁽²⁾	503.10	A	RLCM (OPAC) RSC-S Star Remote Hub
	DMS-100 ⁽³⁾	LEC00015	A	RLCM (OPAC) RSC-S RSC Star Remote Hub
Redcom Lab., Inc.	MDX MDX-I ⁽⁷⁾	17.0 6.0	A A	MDX-R MDX-IR
Santera Systems, Inc.	SanteraOne ⁽⁹⁾	2.0	A	SanteraOne
Siemens Information and Communication Networks	DCO ⁽⁴⁾	24.0 O-N-E UP	A	RLS-450 RLS-1080 RLS-4000
	EWSD ⁽⁸⁾	20.0	A	RCU RCU-160C RCU-800C Smart Remote
Taqua, Inc.	iX7000	2.3.0	A	iX7000

See page 6.3.1 for notes.

6.3.1
10-03
pc

Notes:

- (1)Acceptance Classification: C-Conditionally Accepted, A-Accepted.
- (2)The DMS-10 listing includes the one and two bay version and its application as an HSO, SSO or LCC.
- (3)The DMS-100 listing includes its application as a DMS-200 tandem office and the smaller version of the SuperNode configuration, the DMS-SuperNode SE.
- (4)DCO listing includes the DCO-SE one and two bay configurations and DCO RNS.
- (5) The listed software/firmware system release is the most recent system release that was reviewed by RUS and found to be fully compliant with all requirements of 7 CFR 1755.522, RUS General Specification for Digital, Stored Program Controlled Central Office Equipment (Form 522). Other system releases may also be acceptable. For information on specific releases, please contact the Chairman, Technical Standards Committee "A" (Telecommunications), Rural Utilities Service, Stop 1598, 1400 Independence Avenue, SW., Washington, D.C. 20250-1598.
- (6)The 5ESS-2000 digital exchange listing includes the compact digital exchange 5ESS-2000 (CDX) and the very compact digital exchange 5ESS-2000 (VCDX) in host and remote switching terminal configurations (DRM). The listing also includes the EAIU/BZ-RS Unit, also called the 5E-XC Remote Line Unit. When a VCDX is upgraded to a CDX or full sized 5ESS-2000, it can host the listed RSTs. Unless it is upgraded it can only host the EAIU. Emergency call processing using the BZ-RS is only offered for EAIU Units that are hosted from a full sized 5ESS-2000 or from a DRM. The BZ-RS cannot be used to provide emergency call processing on EAIU Units hosted from a CDX or from a VCDX. System Release 5E16.2 is designated 5E-XC Service Rich Software by Lucent.
- (7)The MDX-I listing is for a minimum system configuration of four shelves, each containing no more than 100 lines or 25 percent of the total equipped lines, whichever is less.
- (8)The EWSD listing includes the EWSD Small Exchange (EWSD-SX) and the Line Trunk Group-O (LTGO).
- (9)Systems used for line access for this switch must be included in the RUS *List of Materials Acceptable for Use on Telecommunications Systems of RUS Borrowers* in category ae – Access Equipment.

wn – Wireless Networks

<u>Manufacturer</u>	<u>Product</u>	<u>Technology</u>
AirNet	GSM BSS ⁽¹⁾	GSM
interWAVE	GSM Network ⁽²⁾	GSM

Notes:

(1)Includes AdaptaCell BTS 3000, AirSite BS, BSC 3000, TRAU, and AirNet OMC-R.

(2)Includes WAVEXchange MSC, WAVETransit, WAVEXpress BSC and BTS, and NIB.

<u>Item Designation</u>		<u>Page</u>
Anchor rods.....	x	7.1
Anchors, guy - expanding and plate	z	7.2
" " - drive-type	z	7.2
" " - swamp and rock	z	7.2.1
Bolts, angle, thimble-eye.....	ba	7.13
" machine	c	7.13
" straight, thimble-eye	ao	7.13
Clamps, cable suspension	mz	7.15
" drop wire.....	mk	7.3
" ground rod and pipe (indoors).....	aj	7.4
" ground rod and pipe (outdoors).....	aj	7.4.1
" guy.....	u	7.14
Connectors, grounding.....	me	7.5
Guards, buried service	am	7.6
" cable, plastic.....	wg	7.8
" " split metal	sl	7.7
" riser.....	sg	7.8
Guy hooks	br	7.15
Guy lift plates	bk	7.15
Locknuts.....	ek	7.15
Numbers, pole.....	az	7.9
Nuts, regular, square	px	7.16
Rods, anchor.....	x	7.1
" ground	ai	7.10
Screws, lag.....	j	7.14
Strand, suspension and guy	y	7.11
Straps, reinforcement, suspension clamp.....	nb	7.16
Thimble-eye nuts.....	ab	7.14
Washers	d	7.14
Wires, cable lashing	nw	7.12
Miscellaneous items removed from the list.....		7.17

The manufacturers listed below have shown compliance with RUS requirements for the following anchor rods. Some manufacturers cannot supply all sizes listed. Check with manufacturer or distributor for availability.

x - Anchor Rods

<u>Types</u>	<u>Diameters</u>	<u>Lengths</u>
Single Guy	1/2"	7 ft.
Single and Double Guys	5/8"	7 & 8 ft.
Single and Double Guys	3/4"	8, 9, & 10 ft.
Single and Double Guys	1"	8, 9, & 10 ft.

Manufacturers

Eritech, Inc.
(Carolina Galvanizing Corp.)
A. B. Chance Company
Joslyn Manufacturing and Supply Company
Kortick Manufacturing Company
McGraw-Edison
Utilities Service Company

7.2
1-03
z

z - Anchors, Guy⁽¹⁾

<u>Manufacturer</u>		<u>Catalog Number</u>		
		<u>Expanding and Plate Anchors</u>		
Holding Power - Lbs.:	6000	10,000	16,000	
Min. Required Area, Proj. Sq. In.:	90	120	200	
Rod Diameter, Inches:	5/8	3/4	1	
Rod Length, Feet:	<u>7</u>	<u>8</u>	<u>10</u>	
A. B. Chance	8 Way	-	88135G	1082G
Grip-Tite	8 Way	A322086-G	A322812-G	A322102-G
Joslyn	8 Way Plate	J8115G -	J8135G J7503G	J8200-1G -
McGraw-Edison	4 Way 6 Way Plate	DA1E5 - DA1P7	DA1E7 - DA1P9	- DA6E3 DA2P2
South Central	8 Way 4 Way	84115AG -	84135AG -	- 1042001G
		<u>Drive-Type</u>		
Holding Power - Lbs.:	6,000	10,000	16,000	
Rod Diameter - Inches:	<u>5/8</u>	<u>3/4</u>	<u>1</u>	
Foresight Products		MR-3	MR-2	MR-I MR-SR ⁽²⁾

Notes: (1)Where galvanized anchors are listed, the same anchors ungalvanized (black asphalt coated) are also acceptable.

(2)Swamp anchor.

z - Anchors, Guy

<u>Manufacturer</u>	<u>Catalog Number⁽¹⁾</u>		
	<u>Swamp Anchors</u>		
	<u>10" dia.</u>	<u>12" dia.</u>	<u>15" dia.</u>
A. B. Chance	10150AS	132AS	152AS
Foresight Products	-	MR-SR ⁽²⁾	-
Joslyn	J2871SG	J2872SG	J2873SG

Rock Anchors

	<u>Expanding Type</u>	<u>Split Wedge Type</u>	
Anchor Size - Inches:	<u>1-3/4</u>	<u>1-3/4</u>	<u>-</u>
Rod Length - Inches:	<u>15</u>	<u>30</u>	<u>18</u>
Rod Diameter - Inches:	<u>3/4</u>	<u>3/4</u>	<u>1</u>
A. B. Chance	R315	R330	-
Joslyn	J3436	J3437	-
Kortick	K5503	K5504	K2377
Utilities Service	CR315	CR330	-

Notes: (1)Where galvanized anchors are listed, the same anchors ungalvanized (black asphalt coated) are also acceptable.

(2)Drive type swamp anchor (see drive anchor category).

7.3
1-03
mk

mk - Drop Wire Clamps

<u>Manufacturer</u>	<u>Catalog Number</u>
Diamond Communications	23-44441 23-88881*
General Machine Products	7380-B
Reliable	2PRS*

*Suitable for use in corrosive areas.

aj - Ground Rod and Pipe Clamps

Station Installations (Indoors Only)

<u>Manufacturer</u>	<u>Catalog Number</u>		
This conductor:	.162" (#6 AWG) Copper	.102" (#10 AWG) Copper	.081" (#12 AWG) Copper
Connected to:	Pipe Ground (Copper or Steel) <u>5/8"-1-1/4" O.D.</u>	Pipe Ground (Copper or Steel) <u>5/8"-1-1/4" O.D.</u>	Pipe Ground (Copper or Steel) <u>5/8"-1-1/4" O.D.</u>
Electric Motion	EM5507 EM5517(3)	EM5507 EM5517(3)	EM5507 EM5517(3)
Reliable	13(1) --	13(1) 1(1)(2)	13(1) 1(1)(2)

Notes: (1)Smallest size pipe this clamp can be used on is 3/4".

(2)Can only be used on copper pipe.

(3)Can accommodate one #6 to #14 AWG and one #10 to #14 AWG copper conductor.

7.4.1
1-03
aj

aj - Ground Rod and Pipe Clamps

Station Installations (Outdoors)

<u>Manufacturer</u>	<u>Catalog Number</u>			
	<u>Ground Rod (Galvanized Steel)</u>		<u>Ground Rod (Copper-Covered Steel)</u>	
<u>Connected to:</u>	<u>1/2"</u>	<u>5/8"</u>	<u>1/2"</u>	<u>5/8"</u>
Blackburn ⁽¹⁾	G4P	G5P	G4	G5
H. L. Boggs	CR-1, M2009 ⁽¹⁾	CR-1, M2012 ⁽⁴⁾	CR-1, 2009 ⁽¹⁾	CR-1, M2012 ⁽⁴⁾
Burndy	GRC12 ⁽¹⁾	--	GRC12 ⁽¹⁾	--
Connector Castings ⁽¹⁾	--	--	G-4	G-5
Electric Motion	EM5507 EM5517 ⁽³⁾ EM1DB EM4DB ⁽¹⁾⁽⁸⁾	EM5507 EM5517 ⁽³⁾ EM2DB EM4DB ⁽¹⁾⁽⁸⁾	EM5507 EM5517 ⁽³⁾ EM1DB EM4DB ⁽¹⁾⁽⁸⁾	EM5507 EM5517 ⁽³⁾ EM2DB EM4DB ⁽¹⁾⁽⁸⁾
Erico ⁽¹⁾⁽²⁾ (Cadweld)	GR1-141G GR1-141A	GR1-161G GR1-161A	GR1-141G GR1-141A	GR1-161G GR1-161A
Eritech, Inc. (Knight Metalcraft)	--	--	CP 12	CP 58
Galvan	G4P ⁽¹⁾	G5P ⁽¹⁾	G4 ⁽¹⁾	G5 ⁽¹⁾
Joslyn	--	--	J8491	J8492 ⁽⁴⁾
Penn-Union	CEB-1-TN ⁽⁴⁾	CEB-2-TN ⁽⁴⁾	CEB-1 ⁽⁴⁾	CEB-2 ⁽⁴⁾
Thomas & Betts	--	--	--	DGC58-66 ⁽⁴⁾
Tyco Electronics	1-83017-1 ⁽⁵⁾ 83017-5 ⁽⁴⁾	1-83017-3 ⁽⁵⁾ 83017-2 ⁽⁴⁾	1-81713-1 ⁽⁵⁾ 81713-5 ⁽⁴⁾	1-81713-3 ⁽⁶⁾ 1-81713-2 ⁽⁷⁾ 81713-1 ⁽⁴⁾
	--	--	--	81405-1
				81406-1

Notes:

(1)Accepted only for use with 0.102" (#10 AWG) and 0.162" (#6 AWG) wire.

(2)Includes disposable mold.

(3)Can accommodate one #6 to #14 AWG and one #10 to #14 AWG copper conductor.

(4)Accepted only for use with .162" (#6 AWG) wire.

(5)Accepted only for use with 0.102" (#10 AWG) or 0.081" (#12 AWG) wire.

(6)Accepted only for use with 0.102" (#10 AWG) wire.

(7)Accepted only for use with 0.081" (#12 AWG) wire.

(8)Can be used on a ground that is already occupied by another ground rod clamp on top.

me - Grounding Connectors

<u>Manufacturer</u>	<u>Catalog Number</u>		
Connected to:	.162" (#6 AWG) Copper	.102" (#10 AWG) Copper .162" (# 6 AWG) Copper	.102" (#10 AWG) Copper
	.162" (#6 AWG) Copper	.257" (#4 AWG) <u>ACSR</u>	.102" (#10 AWG) Copper
Anderson Electric	C-6	--	C-10
Blackburn	6H	--	--
Burndy	KS17	--	KS90
Dossett	DS2F	--	DS09F
Erico ⁽¹⁾	PGT-1G1G (Solid-to-Solid) PGT-1H1H (Stranded-to-Stranded) PGT-1H1G (Solid-to-Stranded)	-- -- --	PGT-1B1A (Stranded-to-Solid) PGT-1A1A (Solid-to-Solid)
Electric Motion	EM 2371	--	EM 2371
Fargo	GC-5006	--	GC-5008
Galvan	K-6	--	--
Joslyn	J3606	--	J3657F
Kearney	118102	--	118100
Penn-Union	S-6	SW-5	S-10
Tyco Electronics	81663-1 ⁽²⁾	--	--

(1)Additional Erico CADWELD connectors are available for other combinations of ground wire.

(2)For use with two stranded #6 conductors only.

7.5.1
1-03
me

me - Grounding Connectors

(Compression Type)

<u>Manufacturer</u>	<u>Catalog Number</u>
	.102" (#10 AWG) Copper to .109" (#12 BWG) (MPDW)
Burndy	YC8C8-ET
National Tel.	T2-109D

**#6 Copper to
#4 & #6 Alum.**

**#6 Copper to
#2 & #4 Alum.**

Blackburn	6CA	4CA
Burndy	KSA4	KSA2
Penn-Union	SW-5	SW-6

me - Grounding Connectors

<u>Manufacturer</u>	<u>Catalog Number</u>	
Connected to:	<u>.102" (#10 AWG) Copper</u> <u>.109" (#12 BWG) Steel (MPDW)</u>	<u>#10 AWG Copper</u> <u>.134" Steel (MPDW)</u>
Blackburn	9TW	-
Burndy	KSL-15	-
Dossert	DSN1F	-
Penn-Union	SW-1	SW-2

.102" (#10 AWG) Copper

<u>Connected to galvanized steel strand:</u>	<u>6M</u>	<u>10M</u>	<u>16M</u>
Aberdeen	AB 438	AB 438	AB 438
Blackburn	1HPS	1OHPS	20HPS
Burndy	-	KSU25	KSU26
Dossert	DSNS6F	DSNS10F	DSNS13F
Electric Motion	EM GC8010P EM GC8020P	EM GC8010P EM GC8020P	EM GC8010P EM GC8020P
Fargo	GC8010P	GC8020P	GC8020P
Joslyn	J-3030	J-3030	J-3030
Penn-Union	SW-6	SW-7	SW-8

.102" (#10 AWG) Copper

<u>Connected to:</u>	<u>Aluminum-Clad Steel Strand</u>		
	<u>6M</u>	<u>10M</u>	<u>16M</u>
Electric Motion	EM GC8010P EM GC8020P	EM GC8010P EM GC8020P	EM GC8010P EM GC8020P
Fargo	GA-620C	GA-620C	GA-620C
Penn-Union	PCA-010-H	PCA-010-H	PCA-010-H

For Buried Plant Housings (PE-91)

#6 AWG

Electric Motion	EM 0164(1) EM 2371T
Fargo	GC-164SHP(1) GC-5006SHP

(1)Connector will accept braid.

1-03 7.6
am

am - Buried Service House Riser Guards

<u>Manufacturer</u>	<u>Catalog Number</u>									
Type:	<u>Conduit</u>	<u>Conduit</u>	<u>Conduit</u>	<u>Conduit</u>	<u>Conduit</u>	<u>Conduit</u>	<u>Conduit</u>	<u>Conduit</u>	<u>Conduit</u>	<u>Closed "U"</u>
Standard Length and Size:	<u>5' x 3/8"</u>	<u>5' x 1/2"</u>	<u>5' x 5/8"</u>	<u>5' x 7/8"</u>	<u>5' x .9"</u>	<u>5' x 1.13"</u>	<u>5' x 1.25"</u>	<u>20' x 1"</u>	<u>5' x 5/8"</u>	
Charles Industries, Ltd.	--	--	12-119R	--	--	--	--	--	--	--
HMS Inc.	--	R-061	R-070	--	R-080	--	R-125	--	--	--
OSI Plastics Division of Ohio Steel Industries, Inc.	--	--	--	723181 723181 723198	--	723609 723567	--	--	--	--
Virginia Plastics	VP-38-5*	--	--	--	--	--	--	VP-1-EC	VP-B58*	

*Staples will be required for mounting conduit. Double headed nails will be required for mounting Closed "U" type moulding. The mounting hardware shall be ordered separately from this manufacturer.

7.7
1-03
sl

sl - Split Metal Cable Guards

Manufacturer

Catalog Number

10-Foot Straight Section

1" I.D.

3" I.D.

5-Foot Straight Section

1" I.D.

3" I.D.

5-Foot Curved Section

1" I.D.

3" I.D.

2-1/2-Foot Straight Section

1" I.D.

3" I.D.

2-1/2-Foot Curved Section

1" I.D.

3" I.D.

7.8
1-03
sg;wg

sg - Riser Guards (Pole)⁽¹⁾

Inside diameter, inches:	<u>1</u>	<u>2</u>	<u>3</u>
<u>Manufacturer</u>	<u>Catalog Number</u>		
Carlton Products	-	59011	59013
A. B. Chance	6531-1/2	6533	6535
Custom Plastics ⁽²⁾	CPU1	CPU2	CPU3
Electrical Materials Co.	51-2	52-2	53-2
Fargo	UP-843G*	UP-844G*	UP-845G*
Inwesco	54B01	54B03	54B04
Joslyn	J984	J987	J989
McGraw-Edison	DU7P4	DU7P6	DU7P8
Marconi Communications	UP125-8G*	UP225-8G*	UP325-8G*
Nordic Fiberglass	U-101 ⁽²⁾	-	-

*Numbers shown identify painted guards. Use of riser guard straps with these guards not needed.

(1) Order by inside diameter and length.

(2) Mounting staples must be purchased separately.

wg - Plastic Cable Guards

<u>Manufacturer</u>	<u>Catalog Number</u>		
Sizes, inches:	<u>Longitudinally Split</u>		
General Machine Products	<u>1 x 8</u>	<u>1-1/2 x 8</u>	<u>2 x 8</u>
General Machine Products	7422-1	7422-1-1/2	7422-2

Spirally Cut

General Machine Products	Type P (Specify diameter and length)
Preformed Line	Type PTG " " " "
Tyco Electronics	*Spirap " " " "

*Specify black outdoor polyethylene.

7.9
1-03
az

az - Numbers, Pole

<u>Manufacturer</u>	<u>Catalog Number</u>			
	<u>Metal</u>			
	<u>1"</u>	<u>1-1/2"</u>	<u>3"</u>	<u>6"</u>

Almetek(1)	X	-	X	X
------------	---	---	---	---

Premax(1)	-	X	-	-
-----------	---	---	---	---

Plastic

3M Company	No. 5012 (Use 3M decals from 3M-b)
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Note: (1) Order by size and description.

7.10
1-03
ai

ai - Ground Rods
(without pigtails)

<u>Manufacturer</u>			<u>Catalog Number</u>	
	<u>1/2" x 5'</u>	<u>5/8" x 8'</u>	<u>5/8" x 10' Sectional</u>	<u>Sectional Coupling</u>
Apache	G125* GR125-R**	G588* GR588-R**	GRS5810-R	GRC58
Blackburn	- -	GR6258* 625813MX**	- 6260S13MX**	- 60C
A. B. Chance	8565*	8578*	8512*	8611*
Eritech, Inc. (Carolina Galvanizing/ Knight Metalcraft)	811350* 611353**	815880* 615883**	835800* 635803**	GSC-58* CR58**
Galvan	GR5005* 5005G13	GR6258* 6258G13**	- 6260G13S**	60-C** 60-TC** GRC-58G* GRC-54G*
Joslyn	J5315*	J5328*	J23282.10* J9160-13**	J23282-A* J9182**
Kortick	-	K4658-F*	-	-
McGraw-Edison	-	DN5S8*	DN13S110*	DN1K2*
Utilities Service	-	5307*	-	-
Wilcor	-	WA8580G*	-	-

*Galvanized Steel

**Copper-Covered Steel

y - Suspension and Guy Strand

These manufacturers' strands shown by X's comply with
RUS 7 CFR Part 1755.370

<u>Manufacturer</u>	<u>Catalog Number</u>			
	<u>5/16"(6M)</u>	<u>3/8"(10M)</u>	<u>7/16"(16M)</u>	<u>Class</u>
Bekaert Corporation	X	X	X	A,B,C
Cal-Wire Stranding	X	X	X	A,B,C
CF&I Steel Corporation	X	X	X	A
Davis Walker Corporation	X	X	X	A
Florida Wire and Cable	X	X	X	A,B,C
Indiana Steel & Wire	X	X	X	A,B,C
National Strand Products	X	X	X	A,B,C
Seal Wire	X	X	X	A

Extra High Strength Grade, steel, seven wire
(For use as suspension or for guys)

	<u>1/4"(6M)</u>	<u>5/16"(10M)</u>	<u>7/16"(16M)</u>	<u>Class</u>
Aceros Camesa	X	X	X	A,B,C
Bekaert Corporation	X	X	X	A,B,C
Cal-Wire Stranding	X	X	X	A,B,C
CF&I Steel Corporation	X	X	X	A
Davis Walker Corporation	X	X	-	A
Florida Wire and Cable	X	X	X	A,B,C
Indiana Steel & Wire	X	X	X	A,B,C
National Strand Products	X	X	X	A,B,C
Paulsen Wire Rope Corp.	X	-	-	A
Seal Wire	X	-	-	A
Wire Rope Corporation of America (WRCA)	X	X	X	A

7.12
1-03
nw

nw - Cable Lashing Wires

<u>Manufacturer</u>	<u>Catalog Number</u>					
	<u>Aluminum-Clad Steel</u>		<u>Type 430 Stainless Steel</u>		<u>Aluminum*</u>	
Diameter, Inches:	.064	.045	.061	.045	.061	.080
Coil Length, Feet:	<u>600</u>	<u>1200</u>	<u>650</u>	<u>1200</u>	<u>650</u>	<u>375</u>
Aberdeen	-	-	-	45AC	61AC	-
Cable Spinning Equipment Company	-	-	-	13A	11A	16A
Central Wire	-	-	-	S4300004500LWA	S4300006100LWA	-
ECS Metals Limited	-	-	-	X	X	-
General Machine Products	-	-	-	7153A	-	-
Greening Donald Co., Ltd.	-	-	-	80608	80363	-
Industrial Alloys, Inc.	-	-	-	072-430-045-S	072-430-061-S	-
Loos & Company	-	-	-	045SA430LP	061SA430LP	-
Maryland Specialty Wire, Inc.	-	-	-	958-45M	958-61M	-
National Standard	-	-	-	03811	18815	-
Senior Industries	-	-	-	SI-9603	SI-9606	-
ZAPP, Inc.	-	-	-	2355	2356	-

*This type of wire only, is to be used with aluminum-clad steel strand in seacoast areas.

7.13
1-03
c;ao;ba

Manufacturer

Catalog Number

c - Bolts, machine

5/8"

Chance C88XX(1)
Joslyn J88XX(6)

3/4"

C89XX(2)
J89XX(7)

ao - Bolts, straight, thimble-eye

5/8"

Chance C55XX(3)
Joslyn J80XX(8)

3/4"

C56XX(4)
J80XX(9)

ba - Bolts, angle, thimble-eye

5/8"

Chance C50XX(3)
Joslyn J81XX(8)

3/4"

C51XX(5)
J81XX(9)

See page 7.13.1 for notes.

7.13.1
1-03
c;ao;ba

Notes:

- (1)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 5", 6", 7", 8", 9", 10", 12", 14", 16", 18", 20", 22", and 24".
- (2)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 8", 10", 12", 14", 16", 18", 20", 22", 24", and 26".
- (3)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 10", 12", 14", and 16".
- (4)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 12" and 14".
- (5)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 10", 12", and 14".
- (6)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 5", 6", 7", 8", 9", 10", 11", 12", 13", 14", 15", 16", 18", 20", 22", and 24".
- (7)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 5", 6", 7", 8", 9", 10", 12", 14", 16", 18", 20", 22", 24", and 26".
- (8)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 6", 8", 10", and 12".
- (9)** Order bolts by changing X's in catalog number to length of bolt in inches; accepted for lengths 8", 10", and 12".

7.14
1-03
d;j;u;ab

<u>Manufacturer</u>	<u>Catalog Number</u>					
	<u>d - Washers</u>					
Type:						
Size, in.:	<u>2-1/2x2-1/2x3/16</u>	<u>3x3x1/4</u>	<u>3x3x1/4</u>	<u>2-1/4x2-1/4x3/16</u>	<u>2-1/4x2-1/4x3/16</u>	<u>2-1/4x2-1/4</u>
Hole sizes, in.:	<u>11/16</u>	<u>11/16</u>	<u>13/16</u>	<u>13/16</u>	<u>11/16</u>	<u>11/16</u>
Chance	-	6823 1/2	6822 1/2	-	-	6813
Stanley G. Flagg	-	-	P143A	-	-	-
Joslyn	J6822	J113	J6823	J1076	J1075	-

d - Washers

Type:	Curved	Flat	Square
Size, in.:	<u>2-1/2x2-1/2x3/16</u>	<u>2-1/4x2-1/4x3/16</u>	<u>2-1/4x2-1/4x3/16</u>
Hole sizes, in.:	<u>11/16</u>	<u>13/16</u>	<u>11/16</u>
Chance	-	6823 1/2	6822 1/2
Stanley G. Flagg	-	-	P143A
Joslyn	J6822	J113	J6823
		J1076	J1075

j - Screws, Lag

	<u>1/2" x 4"</u>	<u>5/8" x 5"</u>
Chance	C508754	-
Joslyn	J-8754P	J-8765

u - Guy Clamps

Strand size, inches:	<u>5/16</u>	<u>7/16</u>
Joslyn	J930	J931

ab - Thimble-Eye Nuts

Size, inches:	<u>5/8</u>	<u>3/4</u>	<u>3/8</u>
Chance	6510	-	-
Continental Electric Company	TN-5	TN-6	-
Stanley G. Flagg	P128A	-	P129A
Joslyn	J6510	J6511	-

7.15
1-03
bk;br;ek;mz

<u>Manufacturer</u>	<u>Catalog Number</u>	
<u>bk - Guy Lift Plates</u>		
	<u>For 5/8" Bolts</u>	<u>For 3/4" Bolts</u>
Chance	-	7897
Joslyn	J7896	J7894
<u>br - Guy Hooks</u>		
Bolt size (inches):	<u>5/8</u>	<u>3/4</u>
Continental Electric Company	GA-5X	GA-64
Stanley G. Flagg	P135AX	P134AX
Joslyn	J6555	J6556
Power Play Products	B58GH	-
<u>ek - Locknuts</u>		
Size:	<u>5/8"</u>	<u>3/4"</u>
Joslyn	J8583	J8584
<u>mz - Cable Suspension Clamps</u>		
Type:	<u>Straight</u>	<u>Angle</u>
Chance	C7903	C7902L
Joslyn	J1096	J7902-B

7.16
1-03
nb;px

Manufacturer

Catalog Number

nb - Suspension Clamp Reinforcement Straps

Size:	<u>1-3/4"</u>	<u>2"</u>
Chance	C7905	-
Joslyn	J7905	J7908

px - Regular Square Nuts

Size:	<u>5/8"</u>	<u>3/4"</u>
Chance	C55084P	C55085P
Joslyn	J8563	J8564

The following items have been removed from the List of Materials because of their limited use and not because of their inability to meet applicable requirements. Their removal from the list does not relieve borrowers of their responsibility to use materials that meet RUS requirements, ASTM or other national specifications.

- i - Bolts, carriage
- aa - Oval eye nuts
- al - Ground wire staples and nails
- at - Guy guards
- bl - Steel support brackets
- bm - Guy thimble
- cb - Conductor bundle bags
- df - False deadends
- dm - Permanent cable identification markers
- dz - Guy wire clips
- mf - Drive hooks
- mi - Drop wire support
- mj - Drop wire clip
- mm - Drive rings
- mo - Angle screw
- mx - Steel pole steps
- my - Drop wire hooks
- na - Aerial and underground cable
- nc - Cable extension arms
- nd - Metal pole keys
- ne - Bridle rings
- ns - Span clamps
- pg - Porcelain insulated screweyes
- ph - Screw anchors
- pk - Moisture blocks
- pt - Vinyl tape
- pw - Detachable pole steps
- py - Lashing wire terminal clamps
- st - Spacer tape
- tc - Cable ties
- wf - Self-supporting cable
- za - Filler tape
- ze - Sealing compound

	<u>Item Designation</u>		<u>Page</u>
Layer three switch.....	Its		8.1
Subscriber management system	sms		8.2

8.1
1-03
Its

Its - Layer Three Switch

Manufacturer

Alcatel

Type Designation

Omni Switch/Router

8.2
1-03
sms

sms - Subscriber Management System

Manufacturer

Redback

Type Designation

SMS-500 and 1800

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